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The impact of branding on hotel sales prices: A study of upper upscale and luxury hotel properties from 2007 through 2017

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The impact of branding on hotel sales prices: A study of upper upscale and luxury hotel properties from 2007 through 2017

by

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The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this dissertation. The Graduate College will ensure this dissertation is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University

Ames, Iowa

2019

DEDICATION

To

my wife, Karen,

for her encouragement

and inspiration

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Over 30 years ago when I graduated with a Master's degree in Hotel Administration, I dreamed of someday pursuing a Ph.D. in Hospitality Management and finishing my career with a position in academia and sharing what I have learned. During the past three years, with the terrific support of many people at Iowa State, I am completing my Ph.D. in Hospitality Management.

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ABSTRACT

This research study examined branding and non-branding, occupancy, ADR, RevPAR, Gross Operating Profit per Room (GOPAR), Net Operating Income per Room, chain scale classification (luxury and upper upscale), time of sale, and geographic location of hotel as predictors of hotel sales prices. Research has been conducted on various brands and chain scales and the impact of branding on hotel market value; however, there has not been a study on the impact branded versus non-branded hotels have on hotel sales prices. Further no known research exists on testing occupancy, ADR, RevPAR, GOPAR, NOI per Room and chain scale as predictors of hotel sales prices. Due to the increase in both branded and non-branded hotels, investors continue to investigate the importance of brands and the factors that influence sales prices and value. Variables like RevPAR and profitability continue to play important roles in the analysis of hotel value and sales prices by both analysts and investors. Implications on hotel sales price and market value are limited as previous research has not considered sales of independent hotels, which limits the usefulness to investors seeking to capitalize on branded hotels only. In addition, previous historical research has been conducted through an earlier period of time ending in 2006, yet there have been technological innovations in the industry since 2006 which have impacted hotel performance and sales price.

Quantitative statistical methods were employed utilizing Univariate Regression Analysis, Analysis of Variance (ANOVA) and the Analysis of Co-Variance (ANCOVA) aimed at testing the impact of occupancy, ADR, RevPAR, GOPAR, NOI per Room, chain scale classification (luxury and upper upscale), time of sale, and geographic location of hotel on hotel sales prices. Luxury and upper upscale hotel sales from eight (Boston, New York

City, Washington DC, Chicago, Los Angeles, Dallas, Houston and Miami) of the top ten metropolitan statistical areas (MSAs) during the period of 2007 through 2017 were researched and used. RevPAR was statistically significant as a predictor of hotel sales prices. Further, for chain scale luxury sector hotels, GOPAR and RevPAR were both significant as predictors of hotel sales prices. Occupancy, ADR, NOI per Room, date of sale, and geographic location were not significant predictors of hotel sales prices.

The analyses did not appear to show a statistically significant relationship between occupancy, ADR, and NOI per Room as predictors in sales prices of branded and non-branded hotels. The lack of emphasis of these variables on sales prices indicates that buyers and sellers of real estate are first establishing their own assumptions of revenue performance through a RevPAR analysis. Investors are likely developing their own measures of GOPAR and NOI per room measures. The implication of this research is that RevPAR performance is considered important in hotel sales prices and much more so than any other variables.

Key Words: Brand, Non-Branded, Sales Price, RevPAR, GOPAR, NOI.

CHAPTER 1. INTRODUCTION

Background of the Study

Americans are traveling in the United States (U.S.) now more than ever in our history. Some of the increased travel is due to the change in demographics (i.e., increased population), and general changes in demographics such as a growing number of people 25-35 years of age who have vastly different travel preferences, and different means and methods for selecting a hotel and reserving a room. During the next 20 years, the largest working age population by age group declined from 45 to 49 as reported in 2010, to 35 to 39 by 2030 based on US Census data projections (see Table 1.1).

Furthermore, some of the travel is due to increased business travel, and some of the increased travel within the U.S. is due to more Americans' foregoing the traditional international vacation for a vacation within the U.S. Regardless, travel has increased and the

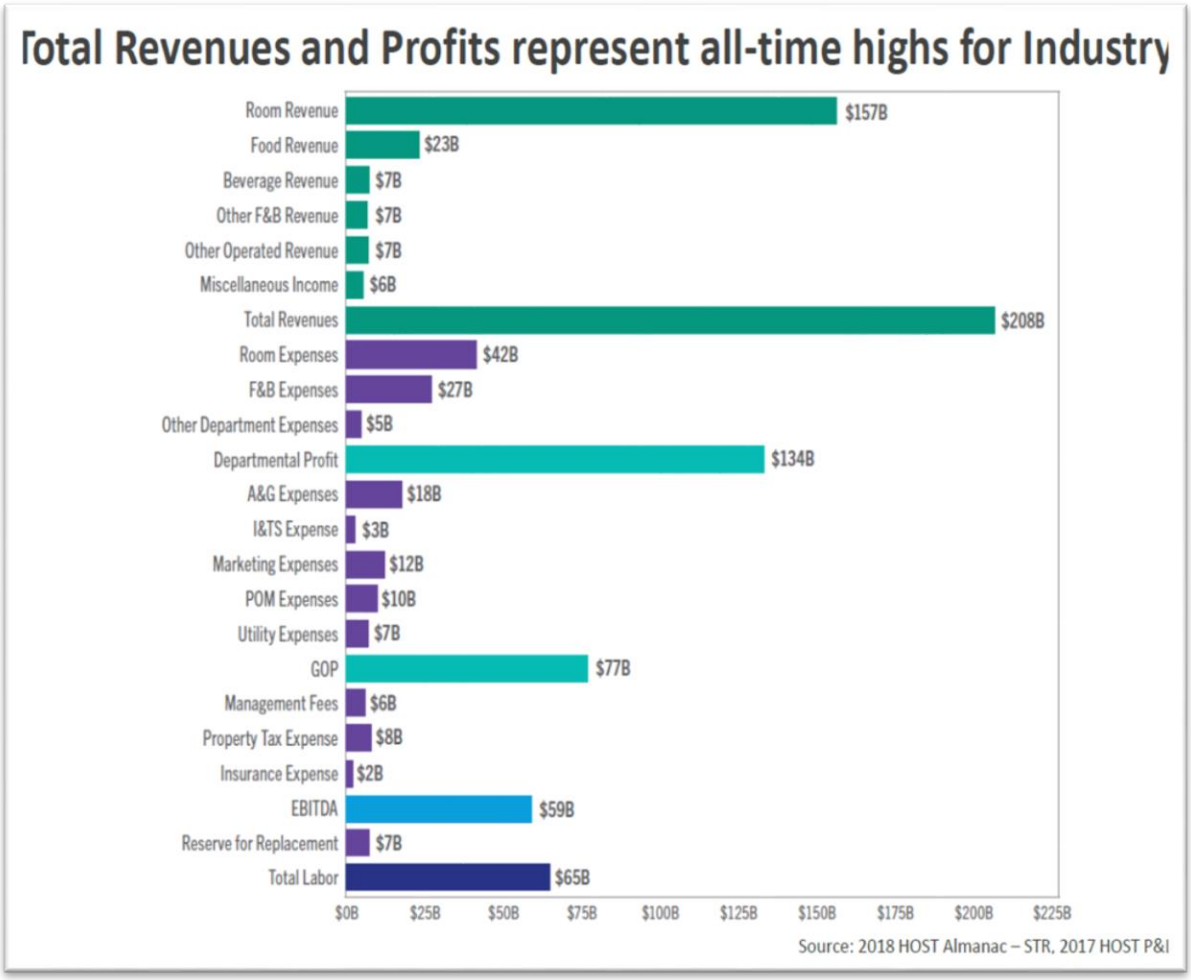
Table 1.1. Population change projections, 2016

Population Change
2010 to 2030

Age Group	Age in Years 2010	2017	2020	2030
1	45 to 49	25 to 29	25 to 29	35 to 39
2	50 to 54	20 to 24	30 to 34	40 to 44
3	15 to 19	55 to 59	35 to 39	30 to 34
4	20 to 24	30 to 34	Under 5	25 to 29
5	25 to 29	50 to 54	55 to 59	5 to 9
6	40 to 44	35 to 39	20 to 24	10 to 14
7	10 to 14	15 to 19	5 to 9	Under 5
8	5 to 9	45 to 49	60 to 64	15 to 19
9	Under 5	10 to 14	15 to 19	20 to 24
10	35 to 39	5 to 9	10 to 14	45 to 49
11	30 to 34	60 to 64	50 to 54	50 to 54
Working Age Population				

Source: U.S. Census, Calculatedriskblog.com, 2016

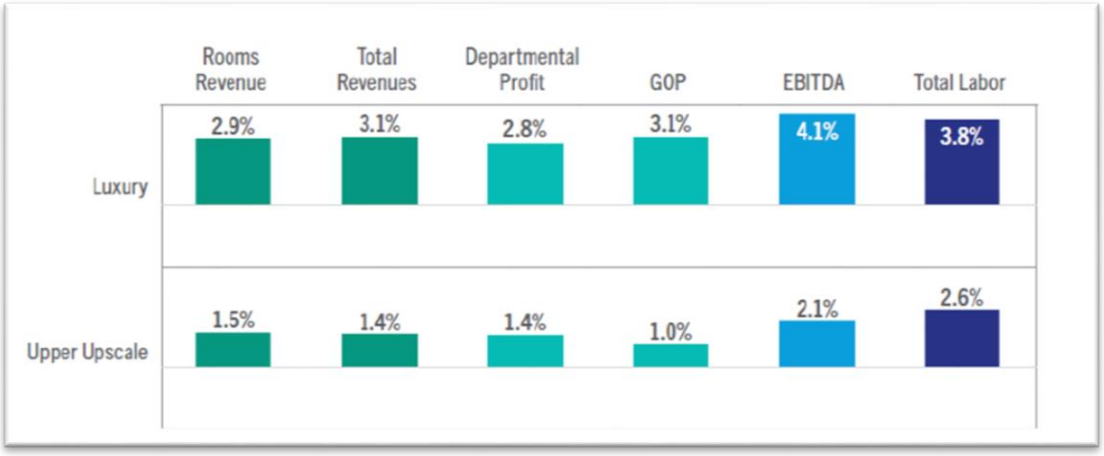
U.S. is experiencing its highest hotel occupancies ever recorded. Concurrent with the uptick in increased travel is increased profitability as the lodging industry is experiencing its highest profitability in its history. As reported by Smith Travel Research (STR), and presented in the following figure (see Figure 1.1), total revenues and profits industry wide are at all-time highs for 2017.



Source: Reprinted from STR Host Almanac, 2018

Figure 1.1. Revenue and profits

Year over year, 2016 to 2017, data indicate the following percentage profit increases for luxury and upper upscale properties (see Figure 1.2). Investors will undoubtedly continue to maintain the pressure on hotels to improve their profitability. Investment criteria, as measured by capitalization and discount rates, remain steady with a slightly downward trend during the past five years (2013 through 2018) for the National Luxury/Upper-Upscale Lodging Segment according to the 3rd Quarter 2018 Report by PwC's Real Estate Investor Survey (see Table 1.2).



Source: Reprinted from STR Host Almanac, 2018

Figure 1.2. Year over year profit increase, 2016 to 2017

Table 1.2. PwC discount rate and overall capitalization rates, current and historical

PwC Real Estate Investor Survey
Third Quarter 2018

	Current	1 Yr. Ago	3 Yr. Ago	5 Yr. Ago
Discount Rate - Average	9.45%	9.53%	9.69%	10.28%
Overall Capitalization Rate - Average	7.05%	7.03%	6.98%	7.83%

Source: PwC Real Estate Investor Survey 3rd Quarter 2018

Undoubtedly, in the future hotel chains will require franchise fees in order to maintain their brands. Investors will explore alternative opportunities of investing in branded hotels and consider investing in independent hotels. Hotel chains have created "soft brands" in order to try and retain investors. The property improvement plans for soft brands are generally much smaller in scope and, consequently, less costly than fully branded properties.

According to the most recent study by *Oxford Economics* (June 2016) for the American Hotel and Lodging Association, the hotel industry in the United States has had a strong impact on the US economy. Hotels represent roughly eight million jobs and the operations of hotels represent $1.1 trillion in sales, including revenue from the hotel, spending by guests and also tax revenue for respective municipalities. It is anticipated that hotels will contribute over $600 billion to the U.S. economy in 2018, and $170 billion in tax revenue for federal, state and local communities. Hotels in the U.S. accommodate more than 1.1 billion guests annually. The U.S. hotel industry is comprised of 542,000 hotel properties, which represents approximately 4.6 million guest rooms.

While strong economic growth has fueled some of the increase in travel, the labor shortage in the industry is making it increasingly harder for hoteliers to operate and staff hotels, using the recent past as a standard. As such, wages are beginning to increase as the demand for employees becomes greater. Online Travel Agencies (OTAs) continue to benefit, as they have not had to increase staffing and compensation along the same increases as hotels. As a significant factor in the booking process today, OTAs do really share in the responsibility of building or maintaining the traveler's trust, as described in Deloitte's 2018 Travel and Hospitality Industry Outlook (Langford & Weissenberg, 2018). Not only do hotels have to live up to the image and perception presented by the OTA's, but the hospitality

industry also remains vulnerable to external risks and events which could disrupt the positive impact of the robust domestic economy. While globalization has had many positive influences on travel, the industry's interdependence has risks – like pandemics and rolling global economic recessions.

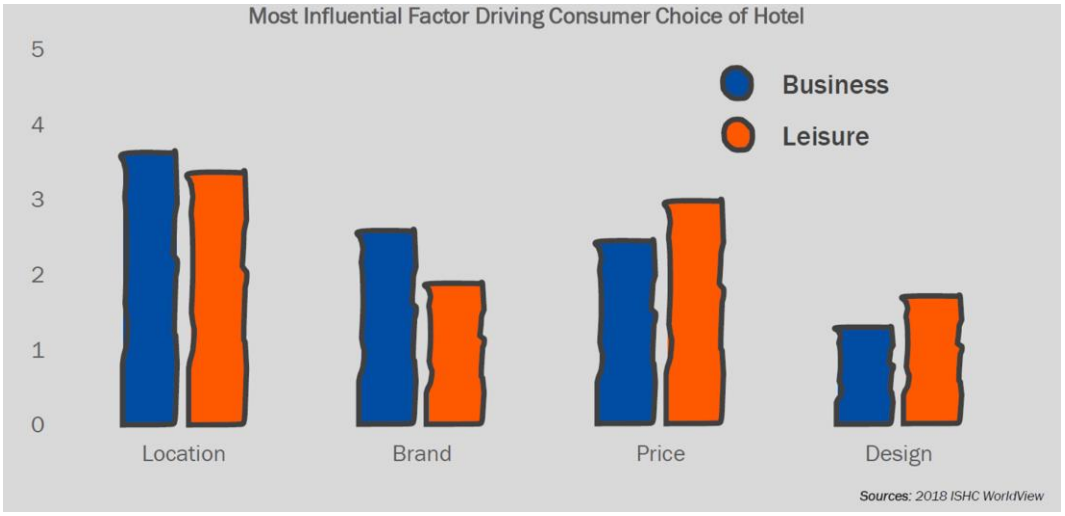
During this period of increased travel, social media has equipped potential guests and hotel room buyers with an arsenal of knowledge as it relates to the best deals from a rate perspective, and invaluable feedback from other guests who have stayed at a property under consideration. According to Langford and Weissenberg (2018, p. 14), the "…perpetual tug-of-war between travel suppliers and online intermediaries may intensify" in 2018 and beyond. Guest experiences posted on sites like Trip Advisor, Kayak, and Expedia have provided feedback such as the guest experience and perception of the quality of the property. These comments indicate that guests need little additional brand information when determining whether or not to make a reservation at a hotel. Most importantly, social media and OTA's have arguably reduced the need for branding, and have increased the prominence and awareness of independent hotels that heretofore were often unnoticed and, in some cases, irrelevant. According to Hashmi (2017), "Direct booking of hotels through their websites and other links is easier and faster because social media create direct accessibility." Control has shifted from the brands to the consumer.

New hotel brands continue to be created, and the lodging industry's 10 largest chains offer over 113 brands with more being created every year. According to Mayerowitz (2015), 31 of the most recently created hotel brands did not exist 10 years ago. The number of hotels classified as non-branded is increasing as well, particularly in urban upscale markets. Hotel investors now have additional value attributes to consider in order to determine where, how

much, and in what to invest. According to the most recent Big Brands Report STR report (Freitag 2015), the large global brands are largely responsible for the growth in brands. In the delineation of product between branded and non-branded, the 2015 report indicated that for North America, approximately 33% of the total lodging inventory was non-branded.

During the past five years there has also been an increase in the number of brands available for guests to choose from, as well an increase in the number of non-branded hotels. The growth in lodging supply in the U.S. has been largely distributed equally between urban and non-urban locations. According to Hennis in *Hotelogy* (2018), there were 106 brands created between 1978 and 2000. The industry then went through a brief period of consolidation, and an additional 72 brands were created during the last 12 years (2006-2018). Most of the brands (over half) were lifestyle brands, and another significant portion were soft brands. These two chain scale classifications supporting travelers' interests in independent hotels as these two segments of hotels are most similar to independent hotels, and share many characteristics. The brand's movement and creation of soft brands like Marriott's Tribute and Autograph collections are in response to demand for independent hotels; however, the soft brands are often viewed as mass producing uniqueness based on design, location, experience, energy, and uniqueness.

Further, according to research conducted by *Hotelogy* (2018) when comparing location, brand, price and design, location is the most influential factor driving consumer choice of a hotel for both business and leisure travelers (see Figure 1.3). Price is second most important. Interestingly, brand and design are less important, which supports the lack of branding or the growth of independent hotels.



Source: Reprinted from Hotelogy Presentation, ISHC Conference, 2018

Figure 1.3. Influential factors driving customer choice

Based on the addition and proliferation of brands and the increasing trend of non-branded hotels, investors need additional information to aid in their investment decisions. Hotel financial performance can vary widely, and is dependent on many different variables like size of hotel, room rates charged, occupancy, location, age, quality, and condition. Hotel brand affiliation (e.g., Hyatt, Marriott, Starwood, & Hilton) can also play a part in performance as the brand establishes the guest perception and caters to the guests' preferences. Owners of hotels have varying reasons for investing in hotels.

Hotels as an asset class are significantly different from other classes of commercial real estate mainly due to the overall operations of a hotel, and the high business value component. The other major classes of commercial real estate include: office, industrial, multi-family, retail, and land. The operation of hotels is a key differentiator. Hotels are an active business, 24 hours a day, 7 days a week and, with the exception of seasonal hotels, hotels operate every day of the year. Most retail businesses (except restaurants) close during nights and holidays. Office buildings and industrial buildings are only occupied with people

mostly during work hours. While all asset classes offer a service, for hotels, the accommodations and service are “an experience” in addition to the service or product of the guest room accommodation. Most importantly, most classes of commercial real estate operate with five to ten-year leases. For hotels, every day/night is a “daily lease”, thus creating a highly perishable experience as once the day has passed, it is impossible to turn the clock back and regain the day to sell the hotel room. This can develop into positive and negative outcomes.

As demand increases and supply remains static, hotels can change their rental rates daily and to take advantage of the increase in demand by charging rates. Conversely, should the market experience an over-supply or a weakening of demand, hotels will typically discount the price of rooms and experience a decline in revenue. Almost all the other real estate classes are protected from these swings through longer-term leases. Through their leases, the other non-hotel asset classes mitigate the downside risks. The development of the underlying assumptions for constructing cash flows for hotels requires a detailed analysis of supply and demand. Within a hotel supply and demand review, a detailed analysis is conducted which utilizes market information, STR data, FW Dodge Construction Pipeline data, and local economic information. The local economic information is generally tied to demand generators, which influence room night demand and can be as far reaching as the local convention center and airport – both of which may be miles away from the hotel, but are influential nonetheless. Other commercial real estate classes do not generally undertake this type of detailed analysis for a supply and demand review. This also impacts how hotels are treated in the valuation process which will be discussed later.

Furthermore, differentiating hotels from other classes of commercial real estate are the many points for accumulating and monitoring revenue (and expenses) into the operation. Hotels might have a spa, retail/gift shop, parking, upgraded floors, upgraded technology that commands a premium charge, tennis, golf, beach, transportation, concierge services, restaurants, and others depending in the location and orientation of the hotel. In addition, hotels are branded and mostly managed through agreements with third parties who specialize in management. Accordingly, a hotel may have an owner, a manager and a franchise, and it may be typical that the motivations of these three parties are not always aligned with the same goals and inherently if their goals are to accumulate more revenue, each party will be self-serving. Hotels also employ and incur significant labor through their operations relative to other classes of real estate. The front desk, guest reception, parking, housekeeping, restaurants, sales and marketing, 24-hour security, entertainment in the restaurant, employee dining, engineering, and general management all require additional employees versus the operations of an office building, retail operation, apartments or a distribution center. As such, once again, the risk of employing not only the most well-suited employees for the positions, but also the correct number to achieve efficient operations and minimalize payroll expenses is challenging for hotel operations.

Population and travel data continue to point towards increased travel. Consumers are more sophisticated and continue to change with changes in demographics and population. With these changes, travelers are seeking unique experiences and the brands are answering with soft brands. Furthermore, investors and hoteliers are responding with independent non-branded hotels. The future of lifestyle and soft brands from the major brands and non-branded hotels appears secure; however, pressure remains for the industry to maintain and

improve profitability. Investors will continue to look for opportunities to maximize their returns, and will continue to evaluate branded versus non-branded investment opportunities.

Statement of the Problem

While there have been studies on the value of brands amongst themselves (O'Neill & Xiao, 2006), there has been no known research on the topic of branded versus non-branded hotels and value. O'Neill and Xiao's research focused on the power of branding, brands, and the brand's effects on hotel market values. O'Neill and Xiao's research also used STR classifications for all hotel types, and they analyzed sales from the Penn State Index for the period 1990 to 2005. While O'Neill and Xiao's research contributed to the overall understanding of branding, its implications on hotel market value is limited in primarily four areas:

- The previous research did not consider sales of independent hotels, thus limiting its usefulness to investors seeking to invest in branded hotels only;
- The historical research was conducted through an earlier period of time. The analysis was throughout a 16-year period that ended in 2006. There have been technological innovations in the industry since 2006. The increased use of technology in operations and the growth of disruptive services from online travel agencies (OTAs) are not fully reflected in the 1990 through 2006 research and transactions;
- The O'Neill and Xiao (2006) research included all market chain scale classifications (limited service, full-service, up to luxury) and did not isolate independent properties, which are predominantly in upper upscale and luxury chain scale classifications, once again, limiting the analysis to branded properties spread across all market chain scale classifications.

- The previous research discarded brands with limited sale transaction volume as the research was focused on branded versus brand impact on volume.

O'Neill and Xiao (2006) concluded that a hotel's brand contributed significantly to its market value. In their study, O'Neill and Xiao (2006) tested the strength and depth of traditional variables (average daily rates, net operating income, and rooms), and their impact on predicting value. They also tested the relative strength of various brands. Their research focused on analyzing thousands of hotel transactions with the goal of answering, "What is role of brands in determining hotels' market values?" While their study of branding and its impact on value was clear and conclusive, it did not include non-branded hotels in its sample or analysis in order to determine the role that attributes from non-branded hotels impact value. Considering the 2006 research and moving fast forward to 2017 with the growth and proliferation of independent hotels (compound annual growth in supply of 6% since 2000), rigorous academic research on independent hotels would provide worthwhile answers to hotel investors.

While the aforementioned study and other research have identified parts of the research problem, further analysis needs to be conducted and this analysis also needs to be a deeper and more comprehensive examination of the aspects regarding the relationship between branding, non-branding, and hotel real estate value. As indicated previously, research has been completed on brands versus brands, however, it is unclear as to how brand versus non-brand may or may not impact the hotel sales prices, making it difficult for investors to underwrite, analyze and consummate hotel deals. The purpose of the current research was to determine if there was a material impact from branding or non-branding on hotels and respective sale prices.

The research undertaken in the current study was exploratory to determine relationship between branded hotels, non-branded hotels, and value in eight major markets with sales data from the upper upscale and luxury chain scale classifications. This research investigated and ultimately concluded on the extent to which differences in value exist between branded and non-branded hotels. The research was current, and considered all brands and independent properties that had transacted. Hotel branding and non-branding and its impact on sale prices may ultimately impact investor interest, which ultimately will benefit the hotel industry. Once again, the purpose of this research was to determine if there is an impact from branding or non-branding of hotels on respective real estate values.

As investors continue to seek investment alternatives in real estate, and specifically the lodging sector, questions like: "How much value should I place on the brand?" and "Could this operation be more valuable as an independent hotel?" continue to be of interest to investors as they underwrite the risks of their potential investments. This research was carried out to provide insights to answer questions such as: "How does branding and lack of branding impact hotel sale prices?" "Does branding impact investor interest?" and "What impact does branding have on investor returns?"

Objectives of the Study

The objectives of the study were to:

1. Determine whether there was a relationship between branded and non-branded hotel sale prices;
2. Ascertain if the relationships are conditional on size of hotel, location, average daily rates achieved, and occupancy;

3. Determine if there was a relationship between the dependent variable sales price and independent variables beyond branding including hotel location (market) and market sector (luxury or upper upscale).

Assumptions

The study was conducted based on the following assumptions:

1. The improved sales from Coldwell Banker Richard Ellis (CBRE) are a representative sample of overall transactions in the respective markets;
2. Secondary data are available and provide for measures of sales price based on location, performance, occupancy, ADR and brand;
3. The eight metropolitan markets analyzed (Boston, New York City, Washington DC, Chicago, Dallas, Houston, Miami and Los Angeles), and properties that sold in those markets from the luxury and upper and upscale market tiers are generally representative of the overall trends in the respective markets, and overall top 20 markets in the U.S.; and
4. The STR data for the upper upscale and luxury markets for geographic markets under analysis are generally representative of the top 20 markets in the U.S. overall.

Significance of the Study

The findings of this study have potential benefits for both the hospitality industry and academia. While research on the impact of various brands on value has been studied, this research was presumed to be one of the first to study the impact of hotel branding and non-branding on hotel value. The analysis indicates that branding is, in fact, not a major factor impacting sale price. Furthermore, investors may want to consider more closely the impact of occupancy, ADR and RevPAR when considering the upside of investment. Conversely, if

the analysis indicates that there is no impact of branding on value, perhaps investors should focus more on market and property performance, and potential in the market.

Definition of Terms

The following terms were defined for this research:

Analysis of Variance (ANOVA): A collection of statistical models used for testing the equality of means across treatment groups.

Analysis of Covariance (ANCOVA): A general linear model which blends ANOVA and regression. ANCOVA analyzes whether the means of a dependent variable are equal across levels of a categorical independent variable often called a treatment, while statistically controlling for the effects of other continuous variables that are not of primary interest, known as covariates.

Average daily rate (ADR): The average selling price (room revenue / rooms sold) (STR, 2018).

Boutique Hotels: Independent or part of a small group or collection of hotels and typically range in size from 40 to 300 guest rooms. These properties are design centric, contain less than 10,000 square feet of meeting space, usually have a restaurant on site and are in either upper upscale or luxury chain scale as defined by STR (Bardoul, 2018, p. 3).

CBRE: Coldwell Banker Richard Ellis (CBRE) is a commercial real estate services and investment firm. It is the largest company of its kind in the world.

Chain Scale: STR nomenclature for delineation between brands includes economy class, luxury, midscale, upscale, upper upscale and upper midscale. The classifications are based on brand achieved average daily rate.

Coefficient of determination (R^2): The coefficient of determination is a statistical value ranging from 0 to 1 that measures the degree of variance for the dependent variable that is explained by independent variables.

Correlation coefficient: The correlation coefficient is the statistical value that measures the strength of the relationship between variables with +1 or -1 indicating a mirrored relationship, and a value of 0 indicating a lack of a relationship.

Covariance: Represents the variability in comparing two variables that can range from a positive or negative relationship with higher value representing a stronger relationship.

Discount Rate: Defined as "A rate of return on capital used to convert future payments or receipts into present value; usually considered to be a synonym for yield rate" (McKinley, 2015, p. 68).

Degrees of freedom: Calculated by subtracting the total number of observations from the number of estimated parameters. The degree of freedom statistic estimates the level of model restriction in prediction with a low value representing that most of the observations were incorporated into the model.

Error variances: The degree of error in measurement for the observable variables and residual terms for the latent factors and structural component of a structural equation model.

Gross Operating Profit: (GOP) is calculated by subtracting Total Undistributed Expenses from Total Departmental Profit.

GOPAR: GOP divided by the number of rooms in the hotel.

Lifestyle Hotels: As defined by Bardoul, 2018, p. 3), Lifestyle Hotels are usually nationally franchised, prescriptive, design centric, planned for travelers who are interested in boutique

lodging, usually contain a restaurant or lounge and are generally upscale and upper upscale as defined by STR.

Luxury Chain Scale Segment: The luxury chain scale segment is defined by STR as those properties that are full-service hotels that achieve the highest ADR by brand average. Hotels that have ADRs generally above $325.00 (calculated every year based on year-end average) and above are placed in the luxury chain scale segment.

Net Operating Income (NOI): Sometimes referred to as Earnings before Income Taxes, Depreciation and Amortization, (EBITA) is calculated by subtracting Fixed Charges, Reserves for Replacement and Management Fees from GOP.

Occupancy: The number of rooms sold divided by rooms available (STR, 2018).

OTA (Online Travel Agency): An online travel agency, or OTA, is an agency that allows one to book flight tickets, holiday packages, hotel rooms, or train tickets via computer. Examples of hotel OTAs include hotels.com, booking.com and trip advisor.

Overall Capitalization Rate: An overall capitalization rate or "cap rate" is defined as "The relationship between a single year's net operating income expectancy and the total property price or value" (McKinley, 2015, p. 165).

Parameter: A measurement characteristic representing the population and derived from a sample.

Revenue per available room (RevPAR): Calculated by dividing the total rooms revenue by the total number of available rooms (room revenue / hotel guestrooms) (STR, 2018).

Standard error: The standard deviation of the predicted values, and a measurement of the predictive accuracy of the model with smaller values indicating a higher degree of predictive accuracy.

Soft Brand Collections: Soft Brand Collection Hotels are affiliated with a major national franchise system (Bardoul, 2018, p. 3). These properties are signature hotels and are individually named and branded. These hotels are unique in design and almost always contain a restaurant and lounge. The properties are upper upscale to luxury as defined by STR.

t-value: The square root of an *f*-value that measures how accurate a variable contributes to the prediction of the model in relation to other variables contained within the equation. A low *t*-value indicates the variable has a minor contribution to the accuracy of the model.

Smith Travel Research (STR): STR is a company founded in 1985 and located in Hendersonville, Tennessee. STR has expanded to 16 countries, with major offices in London, England and Singapore. STR is a highly regarded source for global data benchmarking, analytics and marketplace insights.

Univariate Regression Analysis: Univariate regression is a function involving fitting a curve, through a set of provided parameters. The process finds the parameters that provides the best fit to a series of two-dimensional data points. It is referred to as univariate as the data points are sampled from a one-variable function.

Upper Upscale Chain Scale Segment: The upper upscale segment chain scale segment is defined as full-service hotels that achieve the second highest ADR by brand average. Hotels that have ADRs that average in the range from $175.00 to $325.00 (calculated every year based on year-end average) are placed in the upper upscale chain scale segment.

CHAPTER 2. LITERATURE REVIEW

Introduction

A review of literature of topics related to the supply of hotels, branding and valuation is presented in this chapter. The chapter is divided into the following sections: (1) An overview of branding in the hospitality industry including boutique hotels; (2) Investment parameters in the hospitality industry; (3) Valuation in the hospitality industry; and (4) A review of relevant research that analyzes relationships of value among branded hotels.

A broad search of the literature revealed there has been a paucity of research that has examined the impact of branding on hotel real estate value. The existing research has focused on the impact of brands amongst themselves and the impact of value of Hyatt versus Marriott, for example, without consideration of independent hotels. Considering that the purpose of the research by O'Neill and Xiao (2006) was to examine whether or how much branding impacts value, the findings revealed that examining hotel sales over the period 1990 to 2005 may limit the number of independent sales due to the infancy of independent hotels and the lower number of transactions involving non-branded hotels.

Overview of Branding in the Hospitality Industry

According to CBRE's National Horizon's Report (Mandelbaum, 2018), the U.S. overall has experienced annual supply increases ranging from 0.2% in 2006 to 2.8% in 2009, and the compound annual average growth (CAG) in supply over the 10-year period has been 1.22%, while the CAG in demand during the same period was 1.59% (see Table 2.1). The changes in supply are less than the changes in demand, which indicates that occupancy is increasing. Room rates have also increased as hoteliers have taken advantage of the increase in demand to increase room rates.

Table 2.1. U.S. Hotels Growth in Occupancy, ADR, RevPAR, Supply, and Demand

US Hotels Growth in Occupacy, ADR, RevPAR, Supply and Demand

ChainScale	Year	Occupancy	Occupancy Change	ADR	ADR Change	RevPAR	RevPAR Change	Supply	Supply Change	Demand	Demand Change
All	2006	63.1%	0.2%	$97.82	7.5%	$61.77	7.7%	4,440,491	0.2%	2,803,831	0.4%
All	2007	62.8%	-0.5%	$104.30	6.6%	$65.52	6.1%	4,494,226	1.2%	2,823,396	0.7%
All	2008	59.8%	-4.8%	$107.38	3.0%	$64.24	-2.0%	4,600,530	2.4%	2,752,372	-2.5%
All	2009	54.5%	-8.8%	$98.17	-8.6%	$53.54	-16.7%	4,731,010	2.8%	2,580,254	-6.3%
All	2010	57.6%	5.5%	$98.02	-0.2%	$56.42	5.4%	4,810,823	1.7%	2,769,162	7.3%
All	2011	60.0%	4.2%	$101.74	3.8%	$61.02	8.1%	4,830,583	0.4%	2,897,360	4.6%
All	2012	61.4%	2.4%	$106.02	4.2%	$65.10	6.7%	4,847,373	0.3%	2,976,223	2.7%
All	2013	62.2%	1.4%	$110.01	3.8%	$68.48	5.2%	4,873,182	0.5%	3,033,480	1.9%
All	2014	64.4%	3.4%	$115.13	4.7%	$74.09	8.2%	4,903,440	0.6%	3,155,552	4.0%
All	2015	65.4%	1.6%	$120.33	4.5%	$78.66	6.2%	4,951,189	1.0%	3,236,542	2.6%
All	2016	65.4%	0.1%	$124.07	3.1%	$81.16	3.2%	5,025,604	1.5%	3,287,390	1.6%
All	2017	66.2%	1.2%	$134.16	8.1%	$88.81	9.4%	5,075,860	1.0%	3,336,701	1.5%
Comppound Annual Growth		**0.43%**		**2.91%**		**3.36%**		**1.22%**		**1.59%**	

Source: CBRE, 2018

New hotel brands continue to be created, and the lodging industry's 10 largest chains offer over 113 brands with more being created every year. According to Mayerowitz (2015), 31 of the most recently created hotel brands did not exist 10 years ago. The number of hotels classified as non-branded is increasing as well, particularly in urban upscale markets. Hotel investors now have additional value attributes to consider in order to determine where, how much, and in what to invest.

According to the most recent Big Brands Report (Freitag, 2015), the large global brands are primarily responsible for the growth in brands. In the delineation of product between branded and non-branded, the Big Brands Report indicated that, for North America, approximately 33% of the lodging inventory was non-branded.

Per STR, (Freitag & Minerd, 2017), the total number of guest rooms in the United States is approximately five million and the total number of number of hotels (branded and non-branded) is 542,000. Of the 5 million guest rooms, approximately 2.5% are luxury, and 11% are upper upscale. Of the 542,000 hotels, approximately 1.5% of the hotels are classified as luxury and 3% are classified as upper upscale. Boutique hotels are classified as either Lifestyle Hotels, Soft Brand Collections or Independent Boutique Hotels (Bardoul,

2018). The truly non-branded properties are in the Independent Boutique Hotels classification. The number of properties is not known but would be an even smaller subset of the luxury and upper upscale classifications

Revenue generated by independent hotels in 2017 was approximately $15.0 billion dollars and the supply of independent hotels has increased six percent annually since 2000. Furthermore, according to Bardoul (2018), independent hotels are typically 40-300 rooms, design centric, contain less than 10,000 square feet of meeting space, usually classified as upscale or luxury by STR, and typically have a restaurant or lounge on site. The Boutique Hotel Report also stated, "…independent hotels are edgy, luxurious and minimalistic hip, and are seen as a trendy and an experiential option to a franchised traditional hotel" (Bardoul, p. 38). Of those surveyed by Bardoul for the report, 74% were classified as either luxury or upper upscale.

Based on the addition and proliferation of brands, and the increasing trend of non-branded hotels, investors need additional information to aid in their investment decisions. Hotel financial performance can vary widely, and is dependent on many different variables such as size of hotel, rooms rates charged, occupancy, location, age, quality, and condition. Hotel brand affiliation (e.g., Hyatt, Marriott, Starwood, & Hilton) can also play a part in performance as the brand establishes the guest perception, and caters to the guests' preferences. Owners of hotels have varying reasons for investing in hotels.

Investment Parameters in the Hospitality Industry

Some investors like to invest in short term "turn-a-round" hotels where the investor buys the hotel, renovates the hotel, works towards improving the physical and financial performance of the hotel, and then sells the hotel for a profit. Some investors prefer longer

term investments and like to keep or maintain the investment for 5, 10, or even 15 years or longer. These investors are usually large financial institutions that are considered "patient" investors as they will wait for longer periods of time to realize the profit from their investment. Some investors like to own certain famous hotels, because they want "bragging rights" to the investment. These investors would like to be known for owning a trophy hotel.

Some investors, when they are just getting started in the business world, start by investing in smaller, less sophisticated hotels. This is generally the case because they do not have a reputation (neither good nor bad) in the hotel investment/owner business, and lenders are not willing to loan them significant amounts of money. Over time, as they increase their success, they are able to secure more money from banks and move up to higher quality hotels that are more sophisticated than when they were beginning in the industry. The growth in social media, and the way in which we learn about trends in the world is rapidly changing and impacting many facets of our daily living, including hotel trends. For example, a traveler no longer needs to guess at how popular a hotel might be or not be. A guest can simply go to Trip Advisor and read a review on the internet. Due to this and many other factors, some industry analysts have shared the concern that hotel brands have lost some of their relevance. Furthermore, as previously indicated, the hotel industry has seen a significant increase in the number of independent or non-branded hotels, and the increases have been at a much higher rate than the overall supply increases for total lodging supply in the U.S.

As investors continue to seek investment alternatives in real estate, and specifically the lodging sector, questions such as: "How much value should I place on the brand?" and "Could this operation be more valuable as an independent hotel?" continue to be of interest

to investors as they underwrite the risks of their potential investments. This research was conducted to answer the questions:

- How does branding and lack of branding impact hotel investment value?
- Does branding impact investor interest? and
- What impact does branding have on investor returns?

This research was conducted to provide insight and answers regarding hotel branding and non-branding impact on value and ultimately investor interest. The purpose of the study was to determine and validate the value and value attributes of branded and non-branded hotels. This research included an examination of the role of branding on hotel market values.

While a past study was conducted on the value of brands amongst themselves (O'Neill & Xiao, 2006), there has been no known research on the topic of branding versus non-branding of hotels and value. This current study was exploratory research to determine the relationship between branded hotels, non-branded hotels, and sale prices.

Valuation in the Hospitality Industry

Supply and demand as it relates to hotel valuation involves collecting and analyzing data related to the supply of guest rooms, and the demand that exists in the market to occupy the guest rooms. Value changes as the relationship between supply and demand varies. According to (McKinley, 2013, p. 38),"…the principle of substitution states that when several similar or commensurate commodities, goods, or services are available, the one with the lowest price attracts the greatest demand and widest distribution." Property values are established by the cost of acquiring a similar or substitute property. The principle of balance is created and sustained when the relationship of the various property components, cost of production and the subject property's productivity are all in a state of relative balance. The

principle of externalities simply means that market variables external to the property (e.g., pig farm or hazardous waste site next to the hotel) would have a negative impact on value. Conversely, a large commercial office building or amusement park would have a positive impact as they generate room night demand. The value of real estate is most important to investors of real estate during three major periods; the acquisition, the holding period and at the time of disposition. Perspectives, risk, and return requirements of the investors all impact the investor's view of the investment. For the institutional investor who is measuring risk and returns against other forms of investments like bonds, stocks, etc., real estate might very well be the efficient diversifier as real estate is often viewed as efficient.

In order to understand the uniqueness of the valuation practice in the hospitality industry and how it differs from other real estate valuation, it is important to understand the definition of value, some notable points in the history of value theory, and highlights of the appraisal process as defined and discussed by researchers in hospitality valuation and appraisal. Value is determined through the valuation process, and there are many types of value (business value, fair value, final value opinion, insurable value, investment value, market value, and use value). Most of these values are self-explanatory but may be found in McKinley's (2015), *Dictionary of Real Estate Appraisal* (6th ed.). Market value was applied in this study. As defined by McKinley (2015) market value is:

> …the most probable price, as of a specified date, in cash or in terms equivalent to cash or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale with the buyer and seller each acting prudently, knowledgeably, and for self-interest and assuming the neither is under undue duress. (p. 141)

Value is determined by the valuation or real estate appraisal process. According to McKinley (2013):

> The agents of production of goods, services and income depend on the combined effects of four essential economic ingredients; land (required for development), labor (physical and intellectual contribution of workers), capital (machinery, buildings and infrastructure that produce other goods); and entrepreneurial coordination (profit required to entice a developer). (p. 34)

The fundamental principles of real estate include supply and demand, substitution, balance and externalities McKinley (2013, p. 36). These principles more or less drive value or the creation of value.

According to McKinley (2013), "When developing an opinion of market value, the goal of the valuation process is a well-supported value conclusion that reflects all of the pertinent factors that influence the market value of the property being appraised" (p. 49). To achieve this objective, the appraiser generally utilizes the three approaches to value (Sales, Income and Cost Approaches). The steps in the valuation process include identification of the appraisal problem (identifying the intended use and users, purpose of assignment, conditions and the effective date of the value), scope of work definition, data collection and property description, data analysis, land value opinion, application of approaches to value (Income Capitalization, Sales Comparison, and Cost Approach), and reconciliation of the value indications. Due to the unique nature of operations of hotels and limited alternative uses, hotel valuation requires a careful examination of the market with a comprehensive supply and demand analysis, the development of future cash flows and then the application of the three traditional approaches to value.

Due to the various components of hotel real estate (unique operations, reporting, supply and demand analyses, high business component and physical structure, affiliation, management), the Cost Approach (which requires depreciation estimates) is usually eliminated in most valuations unless the property is relatively new or if depreciation is

readily available and may be accurately estimated. The Sales Comparison Approach is usually performed as a check on the Income Capitalization Approach. Due to the high business component in hotels and hotel operations, the greatest reliance is placed on the Income Capitalization Approach and the Discounted Cash Flow and Income Capitalization techniques included in the Income Capitalization Approach. Furthermore, most investors utilize this method which supports the appraiser's approaches since the job of the appraiser is to emulate and reflect the market, and its approaches to value. There is no one leading or commonly utilized software program which appraisers and underwriters utilize in appraising hotels. While Microsoft Excel is utilized for building supply, demand and cash flow analyses, there is not a specific program which is tied to the hotel appraisal exercise for determining value.

McKinley's (2013) text, *The Appraisal of Real Estate* (14th ed.) is considered as the authority for valuation. For hotel valuations, Rushmore, O'Neill, and Rushmore (2012), and Mellen (1983) have published books and articles that describe issues, nuances of hotel valuations, alternative methods and models of analyzing, unique methods of valuation and the uniqueness of hotels, which have added to the discipline of hotel valuation. The opportunities affecting institutional property values continue to be those of oversupply, lack of understanding of demand, lack of liquidity and the lack of investor confidence. As new supply is gradually absorbed, occupancies will increase which, in turn, should cause average room rates to improve. Increased occupancy levels, eventually augmented by higher average room rates, will result in improved real rates of return, which will enhance liquidity. Investor confidence will improve as yields improve, motivated in no small way by the low returns now being generated by alternate investments.

Plans for increased real estate acquisitions are being made by opportunity funds, and many institutional investors are revising their investment criteria to permit increased real estate allocations over the next couple of years. Strong investment activity is taking place in the hotel sector. While lenders remain cautious, lending parameters have relaxed which have resulted in some excellent buys taking place with solid properties in markets where supply will likely be limited. Similarly, with regard to hotels, the most active buyers are those seeking situations where they can apply their own business expertise to create value for underperforming properties. The prudent view toward real estate investment, whatever the property type, is one of realistic income forecasting based upon thorough research, reasonably probable cash flow projection assumptions and the increased exercise of due diligence in all phases of a prospective acquisition.

For the valuation of hotels, appraisers generally rely on the Income and Sales Comparison Approaches to value. The Income Approach is based on the principle of anticipation. That is, value (or price) is created by the anticipation of future benefits (or income) produced by a property. From the gross income expected is a deduction for operating expenses, fixed expenses and an allowance for reserves for replacement. This equates to a net operating income (NOI), which can be converted to value by one of two methods, or both: Direct Capitalization of the NOI by overall capitalization rates from comparable sales, and a Discounted Cash Flow Analysis. The latter derives a net present value of the cash flow and reversion proceeds at the end of a hypothetical holding period, discounted at a market-supported rate.

A future cash flow projection should be developed that is based on historical and comparable operating data. Once a prospective 10-year cash flow analysis has been

developed, a Discounted Cash Flow Analysis and a Direct Capitalization Analysis will be used. The value of real estate is based on the present value of the anticipated future benefits to be derived from ownership during the investment period.

The appropriate rates applied in the various approaches to value must reflect current investor anticipation of capital market and real estate market performance, and are all interrelated because of either implicit or explicit assumptions made in those approaches. The Direct Capitalization method converts a single year's income expectancy into an indication of value using the formula **I / R = V** (income / rate = value). The stabilized Net Operating Income is divided by an overall capitalization rate, derived from market indicators, to arrive at a stabilized property value.

The Sales Comparison Approach is based on the principle of substitution. To quote McKinley (2013, pp. 63-64), "…a major premise of this approach is that the market value of a property is directly related to the prices of comparable, competitive properties." The sales prices of the comparable properties are usually on a unit basis (e.g., such as the price per room for hotels). "The process of deriving a value indication for a subject property by comparing sales of similar properties to the property being appraised", is defined by *The Dictionary of Real Estate Appraisals* (2015, p. 207).

The Sales Comparison Approach is applicable to all types of real estate when there are enough recent and reliable transactions to discern value patterns in the market. For property types that are bought and sold regularly, the Sales Comparison Approach often provides a valid indication of market value. If the appraiser can obtain reliable information on recent sales of similar properties, this approach is often the most direct and systematic

valuation technique in providing a valid indication that can be used to gauge the reasonableness of the values derived in the Income and Cost Approaches.

The valuation process considers and compares all material differences between the comparable properties and the subject that could affect value. Adjustments for dissimilarities are made to the price of each comparable property to make the comparable equal to the subject on the date of the appraisal. There are several common elements of comparison that should always be considered in a sales comparison analysis, and these include real property rights conveyed, financing terms, conditions of sale, date of sale, location, physical characteristics and income characteristics.

The Cost Approach, as defined by McKinley (2013), is based on a comparison between the cost to develop a property and the value of the existing property. The improvement's replacement or reproduction costs are estimated and a deduction is made for accrued depreciation; to this sum is added the concluded land value to reach an indication of value for the property by the Cost Approach. An investor will pay no more for a property than for what it can be built.

Costs include that of the site, reproduction cost, entrepreneurial profit, and accrued depreciation. The cost approach encompasses: (1) estimation of land value as if vacant and available for its highest and best use via the sales comparison approach; (2) estimation of the reproduction cost new of the improvements including both hard/direct and soft/indirect costs; (3) estimation of appropriate entrepreneurial profit necessary to attract a developer to the project; (4) estimation of accrued depreciation including physical deterioration, functional obsolescence and/or external obsolescence; and (5) summation of the aforementioned resulting in a value indication.

Commonly used Valuation Methods

The literature related to hotel valuation pertains to the business enterprise value of hotels and valuation techniques. Most of the valuation techniques articles pertain to nuances and manipulations to the Income Capitalization Approach to value.

For the issue of business value allocation, most appraisers agree that the business value is created by the franchise affiliation, management and labor. Rushmore (1992) proposed that business value is determined by the expenses associated with franchise and management. Others, like Belfrage (2001), argued that business value in a hotel can be determined via a matched pair's analysis. Accordingly, there appears to be alternatives for estimating business valuation and perhaps a check on each of the alternatives. Rushmore (1992) created a fictitious hotel, applying seven techniques and discussing the benefits and disadvantages of each. These techniques include band of investment – three-year buildup, ten-year discounted cash flow, ten-year with overall discount rate, sales comparison approach, market derived capitalization rate, and room rate multiplier. Except for the three-year build up and room rate multiplier, these techniques or some variation are utilized routinely in hotel valuations. When necessary the room rate multiplier is utilized, particularly when historical data are unreliable and most applicable when valuing a limited service or economy property, mostly because these properties sometimes transact based on room revenue multipliers.

Mellen (1983) pioneered the creation and utilization of the Simultaneous Valuation Formula (SVF), which later became a commonly used valuation technique and methodology. The SVF is a formula that Mellen developed which aids in determining a property's value. The formula is commonly used by appraisers and takes the net operating income over the

assumed period of analysis. Using the formula, and various debt and equity assumptions, the appraiser may then calculate the estimated value of the property.

The SVF simply incorporates the debt and equity requirements, and more specifically applies debt and equity assumptions, which eliminates the need to survey investors and based capitalization rates on other unknowns of the sales transaction. Since lenders and borrowers know how much they will borrow and lend respectively, and at what rates, the SVF affords the appraiser with more specific manner in which to estimate and derive capitalization and discount rates, and therefore an overall value estimate. Jackson (2008) summarized current thinking about hotel valuation by indicating that income capitalization methods provides the most reliable results.

Value among Branded Hotels

O'Neill and Xiao (2006) concluded that a hotel's brand contributed significantly to its market value. They tested the strength and depth of traditional variables (average daily rates, net operating income and rooms), and their impact on predicting value. They also tested the relative strength of various brands. Their research focused on analyzing thousands of hotel transactions with the goal of answering, "What is role of brands in determining hotels' market values?" While their study of branding and its impact on value was clear and conclusive, it did not include non-branded hotels in its sample or analysis in order to determine the role that attributes from non-branded hotels impact value. Considering the 2006 research and moving fast forward to 2017, with the growth and proliferation of independent hotels (compound annual growth in supply of 6% since 2000), rigorous academic research on independent hotels would provide worthwhile answers to hotel investors.

When determining the components of strong branding, Dev and Withiam (2012) concluded via roundtable discussion that the lodging industry suffers from too many brands which are similar – and while on the one hand this offers the opportunity for a brand to stand out, it also provides the distinct possibility that the consumer will suffer from too many brands selling the same attributes. Their research revealed that while some new brands are being driven by consumer preferences, some brand attributes are being developed by the trends in digital and social media.

As it relates to hotel brands and non-branded independent hotels, most of the research in the past ten years has been focused on branding and its impact on hotel performance, brandings' impact on financing, the impact of branding on the structure of the overall real estate, and articles on branding in general. When researching literature for branding and its impact on hotel value, numerous articles and research have been performed on branding as a determinant on value, on investment value based on the investor's motivation, the impact of social media on lodging performance (which will ultimately impact value), and the franchisors' ability to impact value. Corgel, Crocker, and White (2013), concluded that hotel prices are determined by a combination of factors, and these factors include property, city, income and capital market variables.

For some investors it is clear that branding provides easier access to hotel ownership and operations. Freed's (2013) research clarified that brands afford owners with easier choices (as the brands dictate all the major attributes of the property and the standards by which the property must operate), and there are more brands than ever to choose from. Furthermore, brands are likely to provide more options to financing and better financing terms, although this might be changing.

Other research has also attempted with success to link brands with market orientation (for example, one could not find a Four Seasons in Davenport, Iowa), and brand with performance (Dev, Agarwal, & Erramilli, 2008), which is essentially what the study by O'Neill and Xiao (2006) concluded. One notable piece of research that does bear influence is a study and analysis undertaken by Carvell, Canina, and Sturman (2016), which provided a comparison of the performance of branded-affiliated and unaffiliated hotel properties. In their research, Carvell et al. took a matched pair analysis approach in order to analyze the competitive environment, and the nuances of the hotel's characteristics were equalized across the pair and then compared branded and non-branded hotels that were identical in age, rooms, market segment and location. Somewhat surprisingly, their research yielded no difference between affiliated and unaffiliated properties.

In another roundtable conducted by Dev and Withiam (2012) some brand architecture key points were:

- "Just because you can extend your brand doesn't mean you should",
- The brands purpose and positioning should be very clearly established,
- Learn early on where your brand is similar to other brands and where there are points of difference, and
- Finally – use your loyalty program to your advantage.

Much has also been concluded regarding the relationship between guest satisfaction and room revenue. In their study on hotel branding strategy, O'Neill and Mattila (2004) concluded that hotel brands have collected massive amounts of consumer data, which has allowed hotel brand developers the ability to create brands and hotels with attributes that match the desires of the traveling public.

Furthermore, as hotel brands and hotels in general offer the attributes and service that guests are seeking, their guest satisfaction scores improve. O'Neill and Mattila (2004) were able to provide evidence of a strong positive relationship between strong guest satisfaction score and higher occupancy and higher average daily rates. Additional research in this area regarding the brand's ability to manage guest satisfaction scores would be of interest.

Research and literature on independent hotels seems to be descriptive and less rigorous from an academic perspective, and suggests there is opportunity to improve and analyze the impact of non-branding. The research and articles that currently exist primarily address issues pertaining to improving the performance of boutique hotels, the appeal of non-branded properties and why guests are drawn to non-branded properties, preference of investors in boutique properties, attributes that separate branded and independent properties, and the benefits and costs to switch from branded to independent. The articles support the future growth and importance of independent hotels, hence the relevance of the research.

Ricca's (2017) article on the costs and benefits to switch to independent hotels noted that it is important for one to know the reasons for switching, and that dropping a brand should not be exclusively about saving money. In the long run, the rule to having or not having a brand is the impact on operations and the goal of the investors. Furthermore, the balance of not having a distribution system when one is operating as an independent should be carefully considered before dropping a brand. [do not use "you" ever in formal writing]

Hypotheses

The hypotheses were framed based upon the literature review and research objectives:

Branding

H_0: There is no effect due to branding on hotel sales prices.

H_a: There is effect due to branding on hotel sales prices.

RevPAR

H_0: There is no effect of RevPAR on sales prices of hotels.

H_a: There is effect of RevPAR on sales prices of hotels.

Chain Scale

H_0: There is no effect due to chain scale (upper upscale, luxury) classifications on sales price.

H_a: There is effect due to chain scale (upper upscale, luxury) classifications on sales price.

Location

H_0: There is no effect due to location on sales price.

H_a: There is effect due to location on sales price.

Time

H_0: There is no effect due to time on sales price.

H_a: There is effect due to time on sales price.

Summary

This study was conducted based on the prior research that has been performed on branded and non-branded hotel sales prices during a defined period of time. The study may be considered as unique in that it has examined the impact of branding and non-branding on hotel value, and has analyzed transactions in eight of the largest (by population) metro markets in the U.S. Much of the current research has focused on branding amongst brands and a brands impact on real estate value.

There has been no shortage of academic and popular literature on both the importance of brands, and the growth of the boutique and independent sectors. Accordingly, this study considered both branded and non-branded hotels. The analysis provided in this research will add to the literature that examines the impact of branding on hotel sales prices.

CHAPTER 3. METHODOLOGY

Research Design

The purpose of the study was to examine whether brands or non-branded hotel attributes impact the ultimate sales price of a hotel, or if perhaps there are some other factors that may be impacting the hotel sales price. As previously stated, a hotel's brand or lack of brand is a large factor contributing to market value.

The research question continues to seek answers to investors continued investment alternatives in real estate. As hotel investors find answers to questions such as, "What is the impact of branding on value?" and "How much value should I place on the brand?" Then they seek to understand, "Could this operation be more valuable as an independent hotel?" This research was conducted to answer the questions, "How does branding and lack of branding impact hotel sales prices?" "Does branding impact investor interest?" and "What impact does branding have on investor returns?" The study was conducted to provide insights and answers regarding hotel branding and non-branding impact on value and ultimately investor interest. The purpose of this research was to determine and validate the value and value attributes of branded and non-branded hotels. This research includes an examination of the role of branding on hotel sale prices.

The objectives of the study were to:

1. Determine whether hotel branding impacts sales price;
2. Ascertain if the relationships are conditional on hotel location, average daily rates achieved and occupancy;

3. Determine if there was a relationship between the dependent variable sales price and independent variables beyond branding including hotel location (market) and market sector (luxury or upper upscale); and
4. Determine if the location (MSA) of a hotel impacts sales price.

Based upon the literature review and research objectives, the researcher hypothesized the following relationships with brand and non-brand:

Branding

H_0: There is no effect due to branding on hotel sales prices.
H_a: There is effect due to branding on hotel sales prices.

RevPAR

H_0: There is no effect of RevPAR on sales prices of hotels.
H_a: There is effect of RevPAR on sales prices of hotels.

Chain Scale

H_0: There is no effect due to chain scale (upper upscale, luxury) classifications on sales price.
H_a: There is effect due to chain scale (upper upscale, luxury) classifications on sales price.

Location

H_0: There is no effect due to location on sales price.
H_a: There is effect due to location on sales price.

Time

H_0: There is no effect due to time on sales price.
H_a: There is effect due to time on sales price.

To analyze the role of brands on hotel sale prices, this study used 462 hotel sale transactions from a database of hotel sales maintained by CBRE during the period 2007 through 2017, including 192 transactions that have complete hotel operating and descriptive data. The 192 observations are presented in the Appendix (see Table A.1).

CBRE Hotels is a division of the CBRE Group, Inc. (NYSE: CBG), the largest full service, real estate and investment organization in the world with more than 77,000

employees located in more than 400 offices worldwide. CBRE Hotels operates as an existing specialized advisory group within CBRE, and provides hospitality and real estate industry professionals with a global practice and one-stop shop of unparalleled, global and fully integrated real estate services and products. CBRE Hotels is comprised of over 375 dedicated hospitality professionals located in more than 60 offices across the globe, including San Francisco, Boston, New York, Miami, Philadelphia, Atlanta, Jacksonville, Washington, DC, Houston, Indianapolis, Los Angeles, Seattle, and Bozeman in the US. CBRE Hotels is a specialized advisory group within CBRE and consists of three integrated hospitality-focused divisions including valuation and advisory services, brokerage and capital markets, and research.

Review of the Data

Sales data and sales data trends from the period 2007 through 2017 were accessed from CBRE to ascertain the impact of branding, occupancy, ADR and RevPAR, with a focus on the upper upscale and luxury chain scale classifications as defined by STR. STR is the source for premium global data benchmarking, analytics and marketplace insights. The data provided by STR is confidential, reliable, accurate and actionable. Founded in 1985, STR's presence has expanded to 16 countries, with a corporate North American headquarters in Hendersonville, Tennessee, an international headquarters in London, England, and an Asia Pacific headquarters in Singapore. STR has developed a number of vital benchmarking performance solutions, establishing market trend transparency and attracting investment capital to the sector. In 2008, they expanded internationally through HotelBenchmark, a division of Deloitte U.K., and The Bench, a daily benchmarking company, combined to form

STR Global Limited and then again expanding one year later by launching the Hotel News Now (HNN) digital media platform.

The CBRE sales and STR data were subdivided based on sales price, size, location (MSA), performance and chain scale classification. Since the first hypothesis was no effect due to branding on hotel sale prices, this research employed the most encompassing measure of hotel sale prices, rather than examining two and three-star properties in tertiary (non-top 20) markets. Sales from the upper upscale and luxury chain scale classifications were examined to determine if segment has an impact on sale value trends. Further, data from STR from the eight geographic markets was collected to test the performance of the sales.

For the period prior to sale, known as the trailing twelve-month period (TTM), the database included occupancy, average daily rate, revenue per available room (RevPAR), room revenue and a room revenue multiplier, total revenue, net operating income, sales price, year built/year opened and age of the hotel, location and STR classification (luxury or upper upscale). This study utilized the STR classification as this method of classification is widely used and well known within the hospitality industry. An example of chain scale brands is presented as Table 3.1.

Methodology

This study provides a more comprehensive research and with a different focus than the study completed by O'Neill and Xiao (2006). Since the focus of this research was brand versus non-brand (independent) impact on value, the data collected for this research included all sale transactions from both brands and non-branded hotels, and did not discard sale transactions from any brand. The previous research was conducted during an earlier period of time, while the current research collected data during the most recent economic cycle

(2007 through 2017), which should be reflective of innovations in the industry like technology, brand expansion, and OTAs. Economic cycles tend to average 7-9 years according to CBRE, and the last recession was in 2008. Accordingly, in order to include data through the current economic cycle, this research utilized data from the period 2007 through 2017 (last full year of available data).

The focus of previous research was brand versus brand, including data from all chain scale classifications (economy up to luxury). According to Hennis (2018), 80% of the non-branded hotels are within the upper upscale and luxury chain scale classifications. Accordingly, this research utilized sales from the upper upscale and luxury chain scale classifications as these two classifications represent the largest number of non-branded properties, and provided for the best representation for analysis. For the previous research, the Penn State Index of sales was utilized, and it was assumed that this included a broad representation of sales.

Data from STR through 2017 indicated that 86% of the non-branded hotels were in the top 20 largest populated markets in the U.S. Within the top 20 markets, the top five markets represented over 50% of the non-branded hotels. For geographic and brand and non-branded hotel inventory representation, this research utilized 8 of the top 10 metro markets which included: New York City, Los Angeles, Chicago, Houston, Dallas, Miami, Washington DC and Boston. It was assumed that these markets are representative of the remaining markets and hotel inventory.

The research design entailed performing an Analysis of Covariance (ANCOVA) to examine the effects of brand on sales price. The predictor variables, Brand and Non-Brand, were the categorical variables. Control for per room variables (RevPAR, GOPAR and NOI

per Room) were held against the variables as the analysis was performed. Utilizing the ANCOVA analysis allowed for the testing of brand and non-brand while controlling for the other factors of (covariates) RevPAR, GOPAR, and NOI per Room. Further tests to examine if the changes by hotel chain scale classification (upper upscale and luxury), location (MSA), and date of sale (Year) indicated different strengths of the relationship were performed.

Research Methods

Data Collection, Sampling Procedure, and Sampling Selection

This study might be considered as a landmark attempt to rigorously and empirically study the relationship between branded and non-branded hotels and their impact on value. It was anticipated that this research would aid individual investors, private equity firms, institutional investors, large brand investment groups and various boutique lodging groups as they evaluate and analyze deals in the near future, and as the boutique lodging industry continues to evolve. It was assumed that the findings would be consistent with previous research in the branding only research conducted by O'Neill and Xiao (2006), and that the information and results of the research would be helpful in establishing pricing guidelines in the industry, and determining the overall importance of branding on value. To analyze the role of brands on hotel market values, this study used 462 hotel-sale transactions from the CBRE database of hotel sales (2007 through 2017) and 192 transactions that had complete hotel operating and descriptive data. The total sales for upper upscale and luxury during the period 2007 through 2017 as recorded by HVS was 1,190. The 462 sample represented 38.8% of the total sales. For the period prior to sale, known as the TTM, the database included occupancy, average daily rate, revenue per available room or RevPAR, Gross Operating Profit, GOPAR, NOI, NOI per Room, sales price, year built/year opened and age

of the hotel, location and STR chain scale classification (luxury or upper upscale). The transaction sales database included the following characteristics:

- Eight of the top ten urban markets (Boston, New York, Chicago, Washington, DC, Dallas, Houston, Miami, Los Angeles)
- STR rated luxury and upper upscale
- Branded and Non-Branded Hotels
- Date of Sale
- Size
- Operating Data
- Year Built

The eight metropolitan areas represented 8 of the top 10 largest lodging markets based on the number of hotel rooms. Las Vegas and Orlando were not been included due to their unusual orientation (Gaming and Disney & Theme Parks), which impact investor appeal. Las Vegas is adult-oriented and Orlando family-oriented, so they are unique markets. The eight metropolitan markets included in the study represent approximately 800,000 of the total U.S. lodging inventory of 5.0 mm (16%), and these markets represent a proportionate percentages of upper upscale and luxury rooms of the total U.S. Accordingly, this current study sample was considered representative of the total U.S.

Secondary Data

Secondary data (industry specific data from real estate transaction databases) were collected from CBRE Real Estate and investor/investment reports; CBRE, PwC, RERC, and USRC. Improved hotel sales information and other relevant operational data were collected from the transaction and hospitality databases maintained by CBRE and STR. The list of hotels were limited to those classified as luxury and upper upscale as defined by STR (see Table 3.1).

Table 3.1. STR chain scale brands as defined by STR

Smith Travel Research list of Chain Scales - North America		Smith Travel Research list of Chain Scales - North America	
Luxury		**Upper Upscale**	
21c Museum Hotels	Montage	Ace Hotel	Marriott
AKA	Palace Resorts	Affinia	Marriott Conference Center
Andaz	Park Hyatt	Autograph Collection	Millennium
Belmond	Ritz-Carlton	Club Quarters	Omni
Conrad	RockResorts	Curio Collection	Outrigger
Dorchester Collection	Rosewood	Delta	Pan Pacific Group
Edition	Sixty Hotels	Dolce	Pestana
Fairmont	Sofitel	Embassy Suites	Pulman
Four Seasons	St. Regis	Gaylord	Radisson Blu
Grand Hyatt	Taj	Hard Rock	Renaissance
InterContinential	The Penninsula	Hilton	Sheraton
JW Marriott	Thomason Hotels	Hyatt	Starhotels
Langham	Trump Hotel Collection	Hyatt Centric	Swissotel
Loews	Valencia	Hyatt Regency	Tribute Portfolio
Luxury Collection	W Hotel	Joie de Vivre	Warwich Hotels
Mandarin Oriental	Waldorf Astoria	Kimpton	Westin
		Le Meridien	Wyndham
		Magnolia	

Source: Smith Travel Research, 2017

Reprinted from STR Chain Scale Definitions, 2017

Instruments, Measurement, and Data Analysis Procedure

This research utilized an analysis of covariance (ANCOVA) to examine the effects of brand on a hotel's market value, as measured by sale price per room. ANCOVA is typically utilized when the predictor variable is categorical, and/or if one or more of the sources of variation are known to correlate with the response variable. This also assumes that the magnitude of such correlations are viewed as having an increasing strength or greater than the predictor variables.

The control variables included:

- Revenue Per Available Room (RevPAR);
- Gross Operating Profit per Room (GOPAR); and
- NOI per Room.

These control variables are considered as significant indicators by investors in underwriting investments, and should be controlled to specifically assess the effects of brand and no brand.

Further, each brand's and non-brand's number of rooms were examined and totaled in order to control for the potential effect of brand and non-brand on the hotel's price per room.

ANCOVA, ANOVA, and Univariate Regression Analyses

ANCOVA is considered different from multiple regression analysis as well as the analysis of variance (ANOVA) – as the strength of the ANCOVA analysis is that it statistically allows for the removal of extraneous effects. ANCOVA uses an analysis that is similar to regression to eliminate variation in the responses due to the covariates.

Essentially, the ANCOVA combines the features of regression and ANOVA by treating the extraneous factors as covariates in the following manner:

1. ANCOVA mimics regression by using regression type procedures to eliminate variation in the response variable due to the covariates; and
2. Subsequently, the ANCOVA procedures are used on the adjusted values of the response variable.

By using this process, the ANCOVA partitions the total variation into variables that are assigned to the effect of the predictor, the effects attributable to any covariates and any error. The purpose of the ANCOVA is to compare the predictor levels at a uniform or common level for the covariates.

In this research, the ANCOVA is the most appropriate method of analysis because the predictor (brand and non-brand) is a categorical variable. Furthermore, the literature and research explain the importance of the relationship between the response variable (sales price per room) and the other variables controlled for, such as RevPAR, GOPAR, and NOI per Room. The ANCOVA allows for the testing of brand as the predictor while concurrently controlling for the effects of RevPAR, GOPAR, and NOI per Room.

For the analysis, the ANCOVA of the overall brand effects on hotel market value was performed. The analysis uses the sales price per room for each of the sales transactions as the response variable, brand and non-brand as the predictor, RevPAR, GOPAR, and NOI per Room as covariates. An additional test pertains to the assumption that there might be differences in chain scale classifications of hotel as defined by STR (upper upscale and luxury). This analysis also tested for the assumption that there might be differences in location of hotels. As previously noted, hotel sales transaction data have been collected from eight of the ten largest metro U.S. markets (Boston, NYC, Washington, DC, Chicago, LA, Dallas, Houston, and Miami). Finally for time, a test for the assumption that there might be differences in average sales price of the hotel across time (2007-2017) was performed. The statistical software known as JMP was utilized for the statistical analyses.

CHAPTER 4. RESULTS

This chapter presents the analysis and results of this study, which includes: (a) data description; (b) variable descriptive statistics; (c) analysis of variance; and (d) hypothesis tests and inference. An Analysis of Covariance (ANCOVA) was used to test the difference between branded versus non-branded effect on hotel sales price after controlling for covariates occupancy, average daily rate, revenue per available room, gross operating profit and net operating income. Additional tests on differences in class of hotel as defined by STR (differences between upper upscale and luxury), differences in location of hotels and differences in average sales price of the hotel across time (2007-2017) were performed.

Data Description

As indicated in Chapter 3, sales transactions over a 10-year period (2007 – 2017) of luxury and upper upscale hotels occurring in eight geographic markets (Boston, New York, Washington, DC, Chicago, Los Angeles, Houston, Dallas, and Miami) were extracted from the CBRE sales database. For total commercial real estate brokerage sales, CBRE is the leader in the United States. For Hotel brokerage sales, CBRE is one of the top three firms as measured by sales volume. For the entire U.S., CBRE captured 24% of market share of transaction volume in 2017.

Data Population and Sample Size

Transactions of 462 branded and non-branded hotels for the time period 2007 to 2017, from eight geographical markets and by the market position as defined by Smith Travel Research (upper upscale and luxury) were pulled from the CBRE database. Out of 462 transactions extracted, CBRE has provided complete operating data for 192 of the hotel sales, which includes hotel name, address, brand, chain segment, location (urban, suburban,

airport, city center), metropolitan statistical area (MSA), street address, number of rooms, year built, year sold and sales price. The data are presented in the Appendix (see A.1). Additionally, the data provided (see Table 4.1) included the most recent annual year-end (prior to the sales date), occupancy, average daily rate, RevPAR, room revenue, total revenue, gross operating profit and net operating income as of the sales date.

Table 4.1. Annual averages for 192 data samples, 2007-2017, Occupancy, ADR, RevPAR, GOPAR, NOI per Room, and Sales Price per Room)

Year	Occupancy	ADR	RevPAR	GOPAR	NOI per Room	Average of Price Per Unit
2007	72.4%	$214.49	$158.18	$29,442	$13,983	$308,111
2008	77.3%	$189.74	$144.23	$30,750	$10,917	$370,240
2009	70.8%	$217.06	$154.26	$37,884	$16,719	$193,252
2010	78.8%	$239.64	$192.35	$34,895	$10,270	$312,995
2011	75.0%	$255.54	$192.20	$33,115	$14,608	$335,585
2012	76.9%	$273.97	$207.69	$32,475	$21,464	$307,986
2013	75.7%	$246.67	$186.96	$40,509	$22,689	$296,505
2014	74.1%	$279.01	$194.44	$49,379	$21,811	$324,797
2015	74.7%	$229.51	$173.35	$34,418	$13,491	$278,543
2016	79.9%	$290.62	$236.24	$38,452	$22,462	$496,029
2017	73.8%	$217.96	$165.77	$57,543	$35,068	$361,604
Average	75.4%	$243.63	$184.99	$38,635	$19,380	$339,465

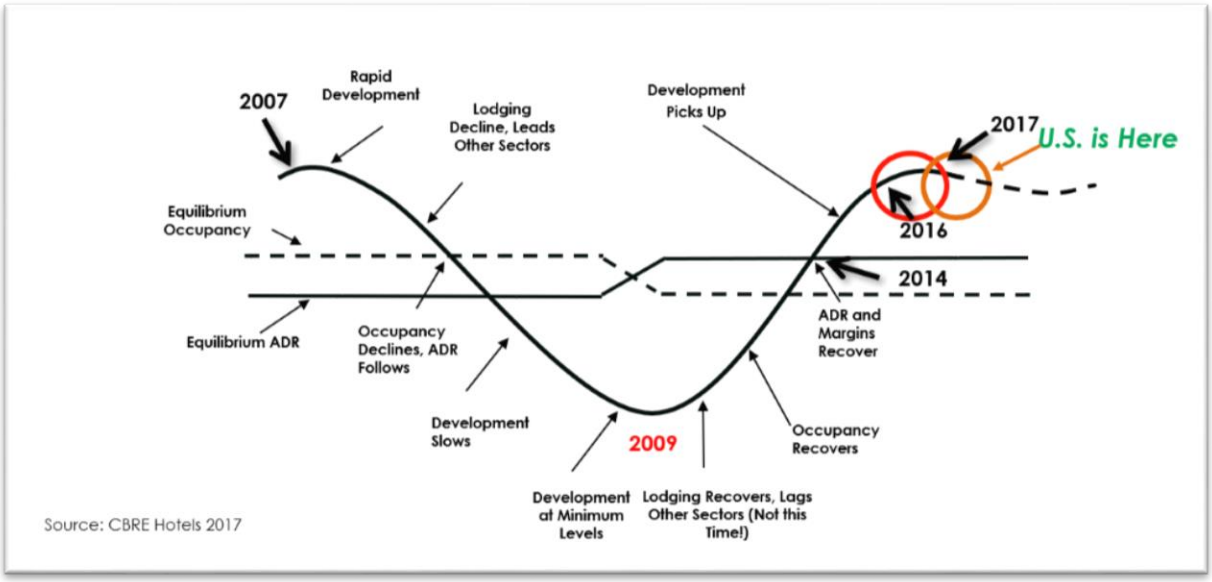
Typically for hotels, over 70% of the total revenue emanates from room revenue. Accordingly, RevPAR (the combination of occupancy and ADR) were analyzed versus sales price. Furthermore, investors measure performance based on gross operating profit and net operating income. Accordingly, gross operating profit per available room (GOPAR) and net operating income per room were also utilized as part of the analysis against sales price. The complete data were available for 192 of the hotel sales, which became the data set for analysis. The data set of 192 sales were analyzed for various distributions and the characteristics of which are presented in the subsequent sections of this chapter.

Economic Cycle

The frequency of sales transactions generally follows the U.S. overall economic cycle. The economic cycle from 2007 through 2017 is presented in Figure 4.1.

Sales Frequency

The random selection of the 192 sales peaked in 2007 (30) as did the U.S. economy during the economic cycle. The period from 2007 through the third quarter of 2008 (Lehman Bros. collapsed on September 15, 2008) was considered the peak period for economic activity in the US. Table 4.2 presents the distribution of sales during the period 2007 through 2017.



Reprinted from CBRE US Market Report, 2017

Figure 4.1. Economic cycle, 2007 – 2017

Table 4.2. Frequency of sale transactions, 2007 – 2017

Sale Transactions 2007 through 2017	
Year	**Number of Transactions**
2007	30
2008	7
2009	7
2010	11
2011	17
2012	11
2013	15
2014	16
2015	26
2016	28
2017	24
Total	192

Source: CBRE

As noted in Table 4.2, the number of transactions peaked in 2007, dropped off significantly in 2008 and 2009 and exhibits a gradual positive trend thereafter through 2017. Figure A.1 in the Appendix depicts the frequency of sales and the trendline highlights the positive relationship between the period of time and the number of sale transactions during the period of analysis.

Brands

For the 136 branded properties a majority were affiliated with Marriott and Hilton brands. Table 4.3 presents the distribution of branded hotel sales among the brands. The distribution among luxury and upper upscale properties indicates that the sample includes more sales that are classified as upper upscale versus the luxury segment. According to STR, there are fewer properties that are classified as luxury, and STR also indicated that properties in this classification tend to trade with less frequency.

Table 4.3. Distribution of branded hotel sales

Distribution of Brands

	Properties	%	Rooms	%
Hilton [1]	31	22.8%	13,882	27.3%
Marriott [2]	69	50.7%	24,243	47.7%
Other [3]	36	26.5%	12,671	24.9%
TOTAL	136	100.0%	50,796	100.0%

Notes: 1 - includes Doubletree, Embassy, Hilton and Waldorf
2 - includes Marriott, Renaissance, Ritz-Carlton, Sheraton, St. Regis, W, and Westin
3 - includes Hyatt, IHG, Kimpton, Choice, Fairmont, Four Seasons, Loews, Mandarin, Sofitel, Trump and Wyndham

Following the frequency of sales from 2009 through 2017, similar to the US economy, the sales increased slowly during this period from 2009-2017. The sales frequency in both the sample (*n*=192) and the total population of sales (*n*=462), exhibits similar frequency. Of the total number of transactions, 136 of 192 or 71% were branded properties. The remaining 56 or 29% were non-branded properties. The delineation between branded and non- branded in the sample is shown in Table 4.4.

This is consistent with the total population of U.S. branded versus non-branded hotels as reported by STR's 2018 data, which reports that approximately 30% of the U.S. lodging inventory is non-branded. For the analyses that are presented subsequently in Chapter 4,

Table 4.4. Distribution of branded and non-branded hotels sales

Category	Number	Percent
Branded	136	70.8%
Non-Branded	56	29.2%
Total	**192**	**100.0%**

Sample size=192.

treating the unequal sample sizes was based on methodology presented by Tabachnick and Fidell (2019, pp. 172, 182-185). Based on their recommendations, a methodology utilizing Type III sum of squares should be used to account for unequal sample size. The statistical software utilized in this analysis is JMP and for the sum of squares, JMP defaults to Type III Sum of Squares and thus accounts for the unequal sample sizes.

Sales Frequency Brand versus Non-Branded

When comparing the frequency of sales between branded and non-branded, similar trends are present. Figure 4.2 presents the frequency of sales of brand versus non-branded for the sample size of 192 sales. The following line graphs highlight these trends.

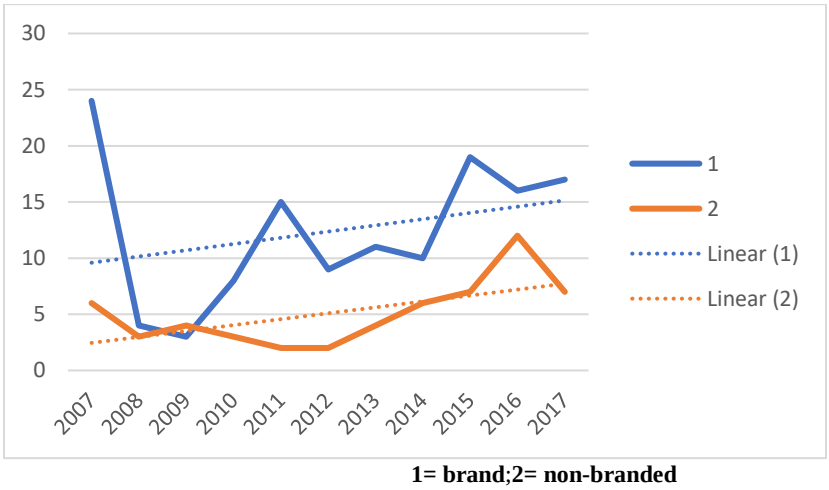


Figure 4.2. Sample size sales (192 of 462 total sales) frequency, 2007 – 2017: Brand compared to non-branded hotels

As noted from Table 4.2, the sample of 192 sales, the brand versus non-branded line chart, the trend for brand versus non-branded are similar and share similar positive strength in their respective trend lines. As a comparison, a line graph presenting the sales frequency of the 462 sales has been presented as Figure 4.3. A trend line graph highlighting the frequency of the 192 sale transactions is presented in the Appendix as Figure A.1.

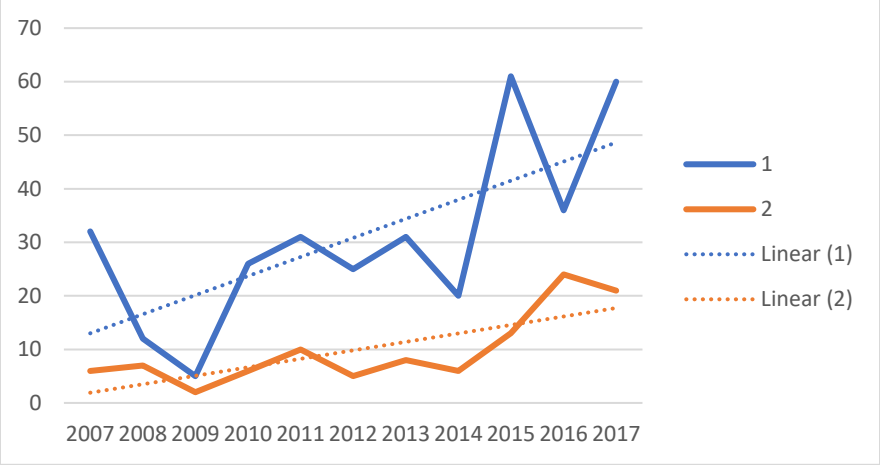


Figure 4.3. Total 462 sales frequency 2007 through 2017
Brand compared to Non-Branded Hotels

Interestingly, the trend for non-branded hotels does not exhibit the same level of volatility (particularly during 2008 and 2009) from year to year. This may be due to having a smaller pool of investors who specialize in investing in non-branded hotels and their interest remains static throughout periods of time with less regard to economic forces. Further, purchasers and sellers of non-branded hotels may not be influenced by other outside forces which would impact the frequency with which they sell. Alternatively, perhaps the lack of a brand is such a strong influencer on purchasers that their investment interest remains static over time.

Number of Rooms Classification – Size of Hotel

The analysis also considered the various sizes of hotels. According to Rutes and Penner (1984, p. 154), hotels that are 600 rooms or greater are classified as convention hotels. Furthermore, according to the Boutique Hotel Report 2018 (Bardoul 2018, p. 15), property sizes from 120 to 150 are most common for boutique hotels. For their study of lifestyle boutique properties, the 2018 report included hotels ranging in size from 40 to 300

rooms, which is the most common range of size for hotels. There have been no studies that classify hotels by room size as either branded or non-branded. Accordingly, considering the aforementioned and in order to illustrate the distribution of hotels by room size, seven classifications of hotel sizes were constructed. The categories were constructed in 100 room increments up to 599 rooms, with 600 rooms or larger considered convention hotels and less likely to be non-branded, except for three properties from the sample. The sales analyzed were classified by size (see Table 4.5).

Table 4.5. Distribution of sales by room size classification

	Count by Size Category		
Number of Rooms	**Branded**	**Non Branded**	**Total**
0-99	1	4	5
100-199	26	17	43
200-299	29	15	44
300-399	22	10	32
400-499	36	5	41
500-599	10	2	12
600 and larger	12	3	15
Total	136	56	192

As noted in Table 4.5, non-branded hotels tend to contain a smaller number of rooms and branded properties tend to be larger. Non-branded hotels have historically been referred to as boutique hotels. Boutique hotels have been considered unique, "one-off" or one of a kind hotels that were non-branded. These non-branded hotels have typically been less than 200 rooms, and were often referred to as "boutique" hotels. These "boutique" hotels prior to the invention of "soft brands" like Marriott's Autograph Collection were usually non-branded. Typically, larger hotels have more meeting space and tend to rely on group meeting business in addition to business transient guests and leisure travelers. Often national,

regional and local associations will require their groups to only stay in branded hotels, and this is in the association's founding charter. Thus, larger group hotels rely on brands for their distribution of business. The largest number of non-branded hotels are in the classification of 100-199 rooms (*n*=17) and 200-299 rooms (*n*=15). The largest number of branded hotels were in the 400-499 rooms (*n*=36).

Sales Price per Unit

The average number of rooms in the hotels in the analysis was 387 rooms for branded and 290 rooms for non-branded. Accordingly, branded hotels on average in the sample were 97 rooms larger, or 33%. On average, in the U.S., according to 2017 data from Smith Travel Research (STR) data, the total U.S. average for chain scale luxury and upper upscale branded hotels was 323 rooms and the average non-branded hotel is 120 rooms. Accordingly, for the U.S., the branded hotels on average were 203 rooms larger or 169%. This may suggest that larger hotels are more likely to be sold, or that smaller hotels are less likely to be sold.

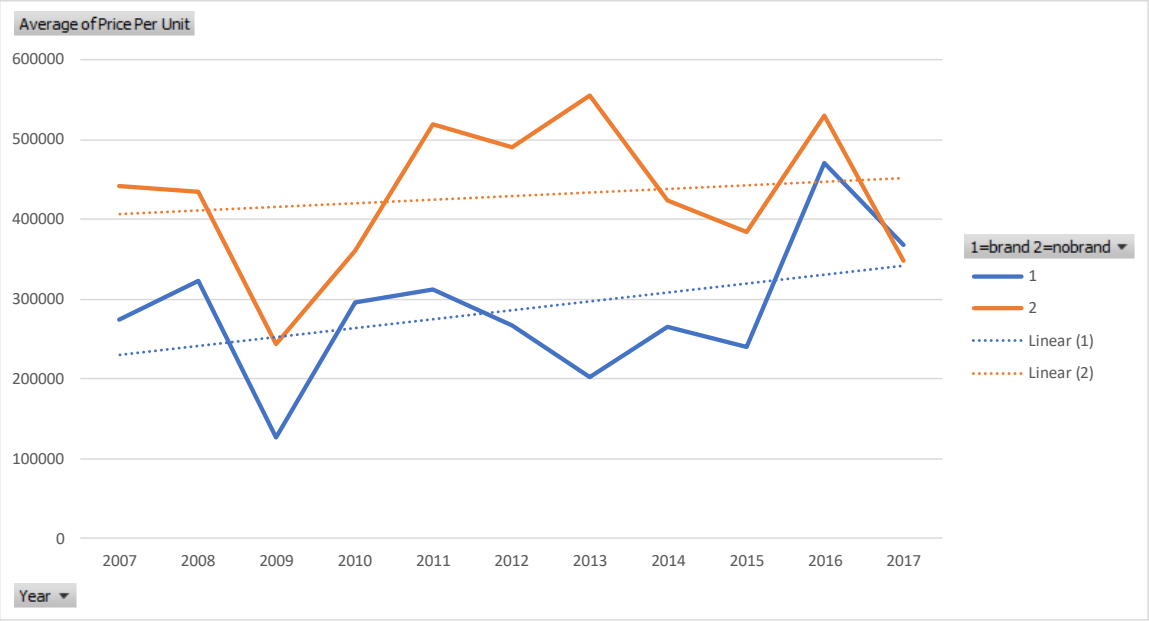
Average sales price for all of the transactions in the sample was $339,465 per room for the entire period under analysis. The average sales price per year throughout the period 2007 to 2017 trended upward during the period 2007 through 2017. There was a strong decline in 2008 and 2009, which mirrored the drop in both frequency and sales prices due to the "great recession" for which reference was made to the economic cycle table at the beginning of Chapter 4. Further review of the brand versus no brand of average sales price indicates that on average the sales price per room (2007 through 2017) of non-branded ($433,080) hotels was higher than that of branded hotels ($300,917), as shown in Table 4.6.

Table 4.6. Average price per unit brand versus non-branded hotels and total/average

Year	Branded	Non-Branded	Total/Average
2007	$274,918	$440,883	$308,111
2008	$322,318	$434,137	$370,240
2009	$126,451	$243,352	$193,252
2010	$295,304	$360,171	$312,995
2011	$311,216	$518,348	$335,585
2012	$267,466	$490,326	$307,986
2013	$202,509	$554,993	$296,505
2014	$265,735	$423,234	$324,797
2015	$239,894	$383,446	$278,543
2016	$470,614	$529,916	$496,029
2017	$367,499	$347,288	$361,604
Grand Total	$300,917	$433,080	$339,465

The average sales price per room for non-branded hotels had a positive trend during the period 2007 through 2017. On average, the sales price per room for non-branded hotels exceeded that of branded hotels. Both branded and non-branded hotels experienced a significant decline during 2008 through 2009, and this mirrored the economic recession and the decline in the commercial real estate markets overall. Overall throughout the 10-year period, the average sales price per room for branded and non-branded hotels tended to mirror each other or follow the same general trend line with non-branded hotels experiencing a higher sales price per room. The ten-year average comparison of branded versus non-branded average sales price difference was $132,163 or a 43.9% difference.

Furthermore, over the 10-year period, the compound annual average change in average sales price (see Figure 4.4) for branded hotels was 2.9% and for non-branded the average declined by 2.4%. Several factors could have driven this decline in pricing for non-branded and the increase in branded. For non-branded, the market may be adjusting investors ability to acquire properties that are non-branded or perhaps the non-branded appeal



1= brand;2= non-branded

Figure 4.4. Average price per unit brand versus non-branded hotels and total/average trend line

by investors has temporarily faded after a run-up in average sales prices in 2011, 2012, and 2013.

Occupancy, average daily room rates (ADR) and RevPAR as mentioned in Chapter 3, are drivers of revenue and ultimately gross operating income and net operating income. Considering their importance in the investment decision, these variables were included in the analysis. As such, Occupancy, ADR and RevPAR also presented revealing trends (similar patterns) when analyzing the distributions. For each of the variables of occupancy, ADR and RevPAR, non-brand hotels out performed branded hotels on average. Table 4.7 presents a summary of the variables and the comparison.

Table 4.7. Occupancy, ADR, RevPAR, GOPAR and NOI per available room versus brand and non-branded hotels

Year	Branded	Non-Branded	Total/Average
2007	$274,918	$440,883	$308,111
2008	$322,318	$434,137	$370,240
2009	$126,451	$243,352	$193,252
2010	$295,304	$360,171	$312,995
2011	$311,216	$518,348	$335,585
2012	$267,466	$490,326	$307,986
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2015	$239,894	$383,446	$278,543
2016	$470,614	$529,916	$496,029
2017	$367,499	$347,288	$361,604
Grand Total	$300,917	$433,080	$339,465

Branded hotels on average in the sample contained a larger number of rooms versus the properties in the non-branded sample. While branded hotels have access to the brand distribution system, it is interesting that the average occupancy for all non-branded hotels was 2.5 percentage points higher in occupancy than branded hotels. This could be attributable to the growing popularity of independent hotels, or due to average smaller size (fewer rooms) of non-branded hotels and these hotels have fewer rooms to sell. Furthermore, the upper upscale and luxury non-branded hotels have a higher average ADR, and that may be due to the lack of meeting space in the non-branded properties and their reliance on business transient and higher end leisure travelers. The resulting RevPAR (occupancy × ADR) highlights the strength and stronger performance of the non-branded properties.

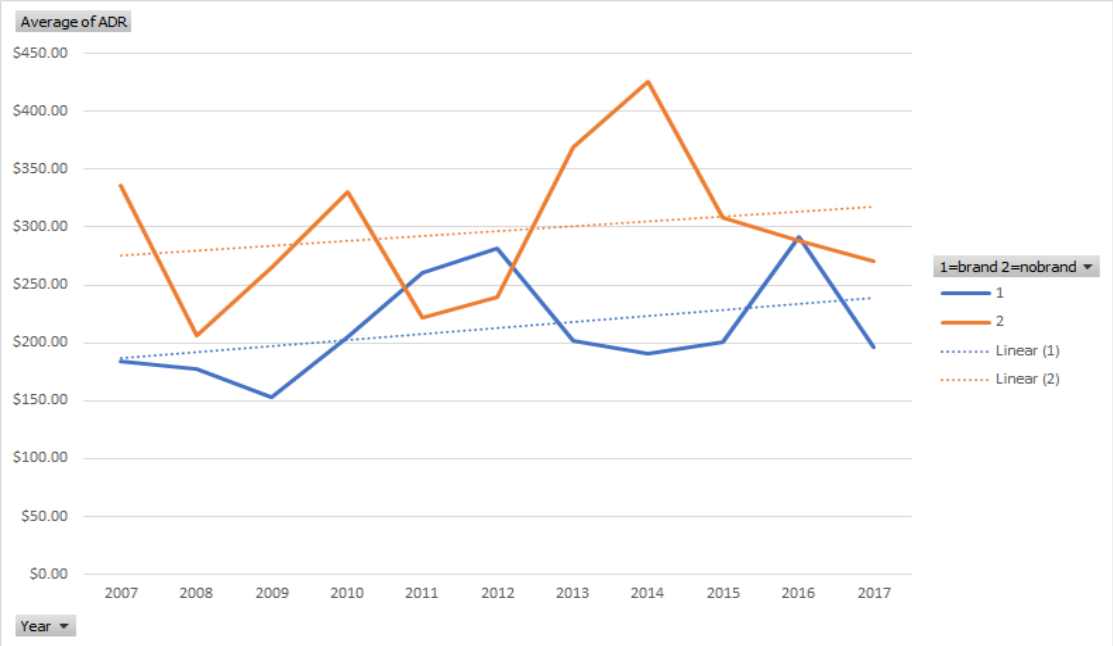
Occupancy

For six of the ten years, occupancies at non-branded hotels were higher than branded hotels. For four of the ten years, occupancies at branded hotels were higher than non-branded. This could indicate that during period of economic downturns, branded properties have a competitive advantage over non-branded hotels due to the attributes that a brand

conveys to a branded property, but only during periods of economic uncertainty. Travelers may want to reduce risks, and one way to do that during these uncertain periods of time is to seek lodging with known brands. Subsequent to the recession of 2008, occupancies at non-branded hotels have exceeded occupancies at branded hotels. The overall trend in occupancy for branded hotels had been slightly down during the period 2007 through 2017. The overall trend in occupancy for non-branded hotels had been moderately positive during the period 2007 through 2017. The overall average occupancy for non-branded properties (77.2 %) exceeded the occupancy of non-branded properties (74.6 %). Non-branded hotels were on average nearly 100 rooms smaller; consequently, with fewer rooms to sell, non-branded hotels would achieve higher occupancies. On average, smaller properties or properties with fewer rooms averaged a higher occupancy.

ADR

Non-branded hotels reported a higher ADR than branded properties (see Figure 4.5) by $88 on average, and this was also true for every year except 2011 and 2012 when the average ADR reported by branded hotels exceeded those reported by non-branded hotels. The ADR trendline for both branded and non-branded hotels were generally parallel again with non-branded hotels reporting a higher ADR ($88) over branded hotels. The greatest spread between average daily room rates between branded and non-branded hotels were found in Miami, followed by Boston and Dallas. Conversely, the MSA's with the most closely averaged room rates between branded and non-branded hotels for transactions were Houston, Washington, DC, and Chicago. ADR by non-branded property exceeded the ADR for branded in every hotel size category except the smaller sized hotels of less than 100 rooms. This may have been due to smaller sized non-branded hotels achieving a higher ADR



1= brand;2= non-branded

Figure 4.5. ADR brand, non-branded hotels, 2007 – 2017

due to fewer rooms and fewer rooms to sell at a discount. The greatest spread was during 2013 and 2014, and the spread narrowed in 2015, 2016 and 2017.

RevPAR

For every MSA, non-branded hotels out performed branded hotels relative to RevPAR. Once again, similar to ADR, Houston, Washington, and Chicago exhibited the narrowest spread between branded and non-branded hotels. The greatest spread between RevPAR's of branded and non-branded hotels were Miami, Boston, and Dallas. Following the trend in ADR, the greatest difference in RevPAR between branded and non-branded hotels was in the smaller hotels (less than 100 rooms). For the smaller hotels less than 100 rooms, the reported RevPAR is significantly higher than for non-branded hotels. Overall, non-branded hotels outperform branded hotels with regard to RevPAR. Again, similar to the

ADR trends, non-branded hotels ranging from 500-599 rooms significantly outperformed branded hotels, and this is due to the several New York City non-branded hotel sales.

Gross Operating Profit per Available Room (GOPAR)

Another data point that is a part of the descriptive statistics is the gross operating profit metric. Gross operating profit is critical in hotel operations, has a relationship with the subsequently derived net operating income, and is an indication of a property's profitability or efficiency in operating as a business. The average GOPAR was higher for non-branded hotels over branded hotels. The difference in the average GOPAR between branded and non-branded hotels was $22,277 with non-branded hotels higher at $54,415 per room. The gross operating percentage average for non-branded hotels in the sample for the entire period was 36.2% of total revenue, and for branded hotels is 33.4% of total revenue. Accordingly, in both whole dollars and as GOP as a percentage to total revenue, non-branded hotels achieved a higher GOPAR over branded hotels, which may be another attribute that impacted the sales price per room. The average annual GOPAR was higher for non-branded hotels than branded hotels – for every year 2007 through 2017.

Another key factor in the efficiency could be attributable to lower operating expenses as non-branded hotels do not pay franchise fees and other fees associated with the brands. Branded hotels, due to the brand with which they are affiliated, will likely have brand standards which are required to be maintained and these standards (bath amenities, paper products in the guest rooms, brand designed signage, bedding requirements), may all contribute to higher operating expenses on an on-going basis which erodes profitability and reduces the gross operating income percentage. Conversely, it would be expected that branded hotels would be able to experience the economies afforded to brands through bulk

purchases. It is possible that economies of scale do not offset the costs of the brand. As expected, the MSA with the highest GOPAR was New York City. This was driven by higher room rates and higher revenue. The MSA with the lowest GOPAR was Houston, conversely with lower room rates and lower revenue from other sources. For the surveyed MSAs, non-branded hotels reported higher annual average GOPAR (versus branded) in all MSAs with the exception of Chicago.

When calculating the GOPAR, the trend is that the larger the hotel, the lower the GOP per room. This may very likely have to do with a higher denominator dividing into the gross operating profit. Furthermore, as hotels are susceptible to high levels of fixed costs, at certain level of utilization the costs become mostly fixed and as the number of rooms available are divided into these costs, both the revenue and the expenses diminish as the number of rooms increases. In addition, larger hotels with sizable banquet and catering space generate higher payroll costs. These costs would drive up expenses and reduce gross operating profit. Accordingly, GOPAR would be lower as well due to higher room counts.

Net Operating Income (NOI) per Available Room

The NOI per available room shared similarities with GOP, however, it appeared that fixed charges might be higher in non-branded hotels. The difference in the average NOI per Room between branded and non-branded hotels was $3,334 with branded hotels higher at $21,742 per room. The implied fixed charges for branded hotels in the sample was $13,730 per room (based on the difference between NOI per Room and GOP per Room) while the implied fixed charges average per room for non-branded hotels was $32,673 (based on the difference between NOI per Room and GOP per Room). Expenses like insurance and property taxes are included in fixed charges. The average expense per room was likely

higher for non-branded hotels since it is possible that insurance costs and property taxes were similar for branded and non-branded hotels. However, since non-branded hotels had fewer rooms on average, the price per room is higher. This had a significant impact on the NOI per Room.

Finally, data pertaining to capitalization rates were examined. Non-branded hotels trade for significantly lower capitalization rates. The lower cap rates for non-branded hotel transactions was consistent for every year during the period 2007 through 2017, except 2015 and 2016. Cap rates were lower for non-branded hotels with the exception of smaller hotels of less than 100 rooms. The lower capitalization rates for non-branded hotels indicated that investors were willing to pay a higher sales price relative to in place net operating income when compared to branded hotels. This could be in part due to the perceived assurance of income due to a brand on a hotel.

Correlations

The preceding paragraphs provided a descriptive review of the data and how it trended during the 2007 through 2017 period of time. For hotels, the variables of occupancy, ADR, RevPAR, GOPAR and NOI per available room all interacted with each other, and in different combinations providing insights into the financial performance of a hotel. Occupancy, ADR and RevPAR all are on the revenue producing side of the equation. GOPAR and NOI per available room are statistics that are net of certain expenses (reference is made to the definitions section in Chapter 2). Many if not all hotel investments and sales prices are based on the income produced from the business. To that end, the relationships among these variables (Occupancy, ADR, RevPAR, GOPAR and NOI per available room)

provide insights. A correlation table (Table 4.8) was created in order to understand the strength of the relationships among the variables.

Based on Table 4.8, the relationships between the variables and price per unit showed that RevPAR and ADR had the strongest relationships (0.6510 and 0.6242, respectively). Further examination of the relationships between variables revealed strong relationships exists between RevPAR and ADR (0.9675), followed by GOPAR and NOI Per Room (0.8435). These correlations are not surprising as investors examine RevPAR and RevPAR penetration when analyzing a potential hotel acquisition, as well as ADR. RevPAR is an indication of past performance and potential performance. Room revenue (essentially RevPAR) is typically 70% plus of total revenue and, accordingly, is the driver of the financial performance of the hotel. The relationship between GOPAR and sales price is also strong. Investors underwrite potential investments, and also analyze financial performance and focus on financial line items that are more controllable than less controllable. Gross operating income performance is before fixed charges (mostly not controllable) and after the controllable expenses of departmental (rooms, food and beverage, miscellaneous), and before undistributed operating expenses (administrative & general, sales and marketing, repair and

Table 4.8. Correlations of Sales Price per unit, Occupancy, ADR, RevPAR, GOPAR and NOI per available room

Correlations

	Price Per Room	OCC	ADR	RevPAR	GOPAR	NOI Per ROOM
Price Per Room	**1.0000**	0.2520	0.6242	0.6510	0.3375	0.2051
Occupancy	0.2520	**1.0000**	0.0961	0.2946	0.1910	0.1566
ADR	0.6242	0.0961	**1.0000**	0.9675	0.4040	0.2166
RevPAR	0.6510	0.2946	0.9675	**1.0000**	0.4205	0.2434
GOPAR	0.3375	0.1910	0.4040	0.4205	**1.0000**	0.8435
NOI PER ROOM	0.2051	0.1566	0.2166	0.2434	0.8435	**1.0000**

maintenance, utilities). Accordingly, investors examine net operating income on historical performance and GOPAR for historical and future performance. Future performance is highlighted as the investors can impact or change or improve the gross operating income.

Univariate Regression Analysis

As part of the study, a univariate regression analysis was conducted between sales price against Occupancy, ADR, RevPAR, GOPAR and NOI per Room independently in order to assess the relationships between the co-variates. A summary of univariate regression analysis is presented in Table 4.9, with estimated parameters from the regression model and statistical significance. The Univariate Regression Analysis model equation is expressed as in the following equation:

$$y = \beta_0 + \beta_1 x \text{ Occupancy} + \in \text{(changing Occupancy with ADR, RevPAR, GOPAR and NOI per Room)}$$

Where: y represents the response variable, and
β (beta) is the parameter to be estimated, and
$\in$ represents error.

Table 4.9. Univariate regression summary: Sales Price regressed against Occupancy, ADR, RevPAR, GOPAR, and NOI per room

Variable	Estimate	Std. Error	*F* Ratio	Prob>[*t*]	*R* Square
Occupancy	714780.4	199628	3.58	0.0004*	0.0635
ADR	1061.6513	96.65966	10.98	<.0001*	0.3896
RevPAR	1460.0515	123.8288	11.79	<.0001*	0.4238
GOPAR	1.7417191	0.3534	4.93	<.0001*	0.1139
NOI per Room	1.6244385	0.563817	2.88	0.0044*	0.0420

Occupancy

There was a significant relationship between sales price per unit and occupancy with a *p*-value of 0.0004. It was evident from the estimated coefficient (714780.4), sales price per unit increasing with every unit (occupancy percentage point) increase in occupancy. Sales

price likely increased with increases in occupancy as occupancy is one of two fundamental variables impacting the increase in room revenue, overall income and resulting gross operating profit and net operating income.

ADR

There was also significant relationship between sales price per unit and ADR with a *p*-value of <0.0001. It was evident from the estimated coefficient (1061.65), sales price per unit increasing with every unit (dollar) increase in ADR. Sales price likely increased with increases in ADR. Similar to occupancy, ADR is also a fundamental variable impacting the increase in room revenue, overall income, and resulting gross operating profit and net operating income.

RevPAR

As previously stated, RevPAR is the combination of occupancy and ADR, and is considered to essentially "level" the differences between hotels that have different occupancies and ADRs. There was a significant relationship between sales price per unit and RevPAR with a *p*-value of <0.0001. It was evident from the estimated coefficient (1460.05), sales price per unit increasing with every unit (dollar) increase in RevPAR. Once again, the unique strength of RevPAR is that it is the combination of occupancy and ADR. Sales price likely increased with increases in occupancy and ADR as RevPAR is a fundamental variable impacting the increase in overall income and resulting gross operating profit and net operating income.

GOPAR

There was a significant relationship between sales price per unit and GOPAR with a *p*-value of <0.0001. It was evident from the estimated coefficient (1.74), sales price per unit

increasing with every unit (dollar per room) increase in Gross Operating Income per Room. Sales price likely increased with increase in Gross Operating Profit as GOP is a fundamental measure impacting the measure and performance of the hotel as an income producing property. There was a direct relationship between GOPAR and NOI per Room, and GOPAR as previously noted is a specific performance measure that investors analyze.

Net Operating Income per Room

There was a significant relationship between sales price per unit and NOI per Room with a *p*-value of <0.0044. It was evident from the estimated coefficient (1.62), sales price per unit increasing with every unit (dollar increase per room) increase in NOI. Sales price likely increased with increases in NOI as NOI is a fundamental statistic analyzed by investors when negotiating and determining purchase price.

ANCOVA Analysis

ANCOVA uses an analysis that is similar to regression to eliminate variation in the responses due to the covariates. ANCOVA combines the features of regression and ANOVA by treating the extraneous factors as covariates by mimicking regression to eliminate variation in the response variable.

In this research, the ANCOVA was the most appropriate method of analysis because the treatment (brand and non-brand) is a categorical variable. As previously stated, of importance to investors are the variables of RevPAR, GOPAR and NOI per Room. The ANCOVA was used to test the difference in sales price per room between branded and no brand as the predictor, while controlling for the effects of RevPAR, GOPAR and NOI per Room.

The ANCOVA model equation (the model with no interaction, but with brand term) is expressed as in the following equation:

$$y = \beta_0 + \beta_1 x \text{ (Brand = 1)} + \beta_2 x \text{ RevPAR} + \beta_3 x \text{ GOPAR} + \beta_4 x \text{ NOI per Room} + \in$$

Where: y represents the response variable,
β (beta) is the parameter to be estimated, and
$\in$ represents error.

Variations of the ANCOVA equation were revised and utilized for each of the subsequent models.

Hypothesis for Branding

H_0: There is no effect due to branding on hotel sales prices.
H_a: There is effect due to branding on hotel sales prices.

In order to test the overall brand effects on hotel sale prices, the sales price per room for each of the sales transactions was used as the response variable, brand and non-brand as the treatment, and RevPAR, GOPAR and NOI per Room as the covariates. Based on the analysis, it was found that the effect of branding on hotel price was not significant (p-value = 0.6369) after accounting for RevPAR, GOPAR and NOI per Room which indicated a failure to reject the null hypothesis.

A significant linear relationship existed between sales price with RevPAR (p-value < 0.001). In addition, there was a marginal linear relationship between sales price with NOI per Room (p-value = 0.0974). The results are presented in Table 4.10.

Table 4.10. Overall brand effect on mean price per room

Variable	Estimate	Standard Error	*t* Ratio	*p* -Value
Intercept	44628595	16668761	2.68	0.0081
1=brand 2=nobrand	4415027.3	9338905	0.47	0.6369
RevPAR	365678.97	78146.59	4.68	<.0001*
GOPAR	-470.0248	328.5509	-1.43	0.1542
NOI Per Room	781.46475	469.0816	1.67	0.0974

The *R*-Square for the model was 0.4353, and the *F*-Ratio was reported at 45.8436. One of the assumptions of ANCOVA is that the equal slope of lines between branded versus non-branded for all the extraneous factors is the homogeneity of regression slopes. In order to test homogeneity of slopes, an ANCOVA model was fitted where all interaction of covariates (RevPAR, GOPAR, NOI) with brand/no-brand treatment was added. It was found that the interaction between brand/no-brand with RevPAR was significant at < 0.0266. The *R*-Square for the model was 0.4735 and the *F*-Ratio was reported at 23.5154. A summary of this ANCOVA model is presented in Table 4.11.

Table 4.11. Overall brand effect on mean sales price per room when crossed against covariates

Variable	Estimate	Standard Error	*t* Ratio	*p*-Value
Intercept	51564.81	77327.33	0.67	0.5057
1=brand 2=nobrand	36669.508	85943.98	0.43	0.6701
RevPAR	1705.0494	328.2329	5.19	<.0001
GOPAR	-0.51607	0.886711	-0.58	0.5613
NOI Per Room	0.5419118	1.360095	0.40	0.6908
Brand/No Brand * RevPAR	-897.1463	401.2312	-2.24	0.0266
Brand/No Brand *GOPAR	1.8519836	1.854073	1.00	0.3192
Brand/No Brand * NOI per Room	0.7922124	2.390079	0.33	0.7407

Hypothesis for RevPAR

H_0: There is no effect of RevPAR on sales prices of hotels.
H_a: There is effect of RevPAR on sales prices of hotels.

As presented in Table 4.11, the test results from the ANCOVA with the overall brand effect mean sales price per room crossed against the covariates indicated there was a linear relationship between sales price and RevPAR. The interaction between brand/no-brand with RevPAR was significant with a *p*-value of <0.0266. This also indicated that the null hypothesis, H_0: There is no effect of RevPAR on sales prices of hotels was rejected.

There was, however, a difference in slope of RevPAR for branded versus non-branded hotels which indicated the slope differed for branded and non-branded hotels and that there was an effect of RevPAR on hotel sales prices. The analysis indicated that with a lower RevPAR the differences between brand and non-branded properties was low. As noted in the interaction plot illustrated in Figure 4.6, it may be likely that branded properties with higher RevPAR's are rewarded by investors through their sales prices. Perhaps, branding may be perceived as contributing to the assurance of that income and, thus, a reward with a higher sales price. For NOI per Room (0.65) and GOPAR (0.69), these variables may be impacted by franchise fees and are less controllable (GOPAR more so through the controlling of expenses departmental and Undistributed Operating Expenses). As such, the ANCOVA analysis indicated that GOPAR and NOI per Room were not statistically significant and

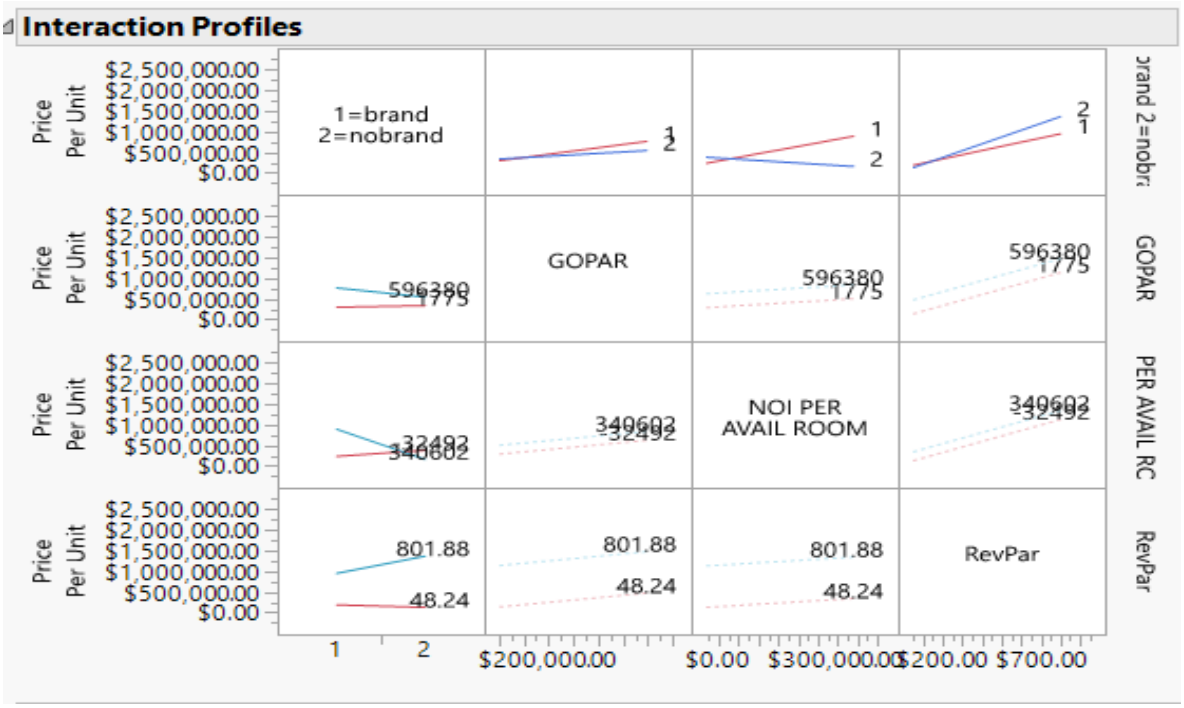


Figure 4.6. Interaction plot for overall brand effect on mean sales price per room when crossed against covariates

were less reliable as predictors in sales prices for branded and non-branded hotels. Franchise fees associated with brands would suggest an erosion to GOPAR, and fixed charges that are net of GOPAR to derive NOI per Room are less controllable by owners as well. The interaction plot indicates that the price per unit is lower when RevPAR is lower for branded and non-branded hotels.

Hypothesis for Chain Scale

H_0: There is no effect due to chain scale (upper upscale, luxury) classifications on sales price.
H_a: There is effect due to chain scale (upper upscale, luxury) classifications on sales price.

An analysis of covariance was conducted to test difference in chain scale (luxury versus upper upscale). The test pertains to the assumption that there might be differences in chain scale of hotel as defined by STR (differences between upper upscale and luxury). As shown in Table 4.12, the effect on sales price for hotels in the luxury chain scale was significant (*p*-value <.0001). The *R*-Square for the model was 0.4758 and the *F* Ratio was reported at 42.2106.

When crossing the chain scales (upper upscale and luxury) against RevPAR, GOPAR and NOI per Room, the inferences changed slightly. The *R*-Square for the model was 0.5982 and the *F* Ratio was reported at 38.9190. Table 4.13 highlights the results from this analysis.

Table 4.12. ANCOVA results of Chain Scale and Sales Price when crossed against RevPAR, GOPAR, and NOI per Room

Variable	Estimate	Standard Error	*t* Ratio	*p* -Value
Intercept	158954.580	36267.83	4.38	<.0001
Chain Segment - Luxury	789612.673	19568.12	4.07	<.0001
RevPAR	944.3317	171.41	5.51	<.0001
GOPAR	0.8743802	0.564679	1.55	0.1232
NOI Per Room	-0.466638	0.80482	-0.58	0.5630

When crossing the chain scales (upper upscale and luxury) against RevPAR, GOPAR and NOI per Room, the inferences change slightly. The *R*-Square for the model is 0.5982 and the *F* Ratio is reported at 38.9190. Table 4.13 highlights the results from this analysis.

The change in sales price for chain scale (upper upscale, luxury) when controlling for the co-variates, (RevPAR and GOPAR) indicated they were significant. The interactions

Table 4.13. ANCOVA results of Chain Scale and Sales Price when controlling for RevPAR, GOPAR, and NOI per Room

Variable	Estimate	Standard Error	*t* Ratio	*p* -Value
Intercept	-27879.24	54198.12	-0.51	0.6076
Chain Segment Luxury	349075.86	83034.65	4.20	<.0001
RevPAR	1914.1871	409.5944	4.67	<.0001
GOPAR	0.1760078	0.822581	0.21	0.8308
NOI Per Room	-0.536724	1.223892	-0.44	0.6615
Chain Segment Luxury * RevPAR	-2486.9300	498.3206	-4.99	<.0001
Chain Segment Luxury *GOPAR	7.1484912	1.752383	4.08	<.0001
Chain Segment Luxury * NOI PER AVAIL ROOM	2.4807299	1.812686	1.37	0.1728

were significant and indicated that with a lower RevPAR the differences between the chain scale segments properties were narrow and crossed at a lower level. As RevPAR increased, the spread between sales price between upper upscale and luxury increased. At less than a $200 RevPAR, sales prices per room for upper upscale were lower than for luxury.

As the RevPAR increases the sales prices for upper upscale hotels is higher. There are likely many reasons for this divergence. However, it is very likely that upper upscale properties with higher RevPAR's are rewarded by investors through their sales prices, and that perhaps the upper upscale properties do not suffer as much during economic downturns as luxury properties do, such as discounting from room rates accelerates in downturns with luxury hotels losing the most. For GOPAR (<0.0001), while this variable may be impacted by franchise fees it is generally thought of being somewhat controllable as undistributed

operating expenses like administrative and general, sales and marketing, repairs and maintenance may be reduced through operational efficiencies.

As such, the ANCOVA analysis indicated that the GOPAR was a significant indicator in sales price. Based on the analysis, it was found that the effect of luxury chain scale classification on hotel price is significant, (*p*-value = <0.0001) after accounting for RevPAR, GOPAR and NOI per Room, which indicated a rejection of the null hypothesis.

The interaction plot shown in Figure 4.7 illustrates that there was a clear interaction between chain segment with RevPAR and GOPAR. The price per unit was lower when RevPAR was lower for upper upscale. The interaction plot also reveals that the price per unit was lower for luxury chain scale hotels when the GOPAR and NOI per Room was lower.

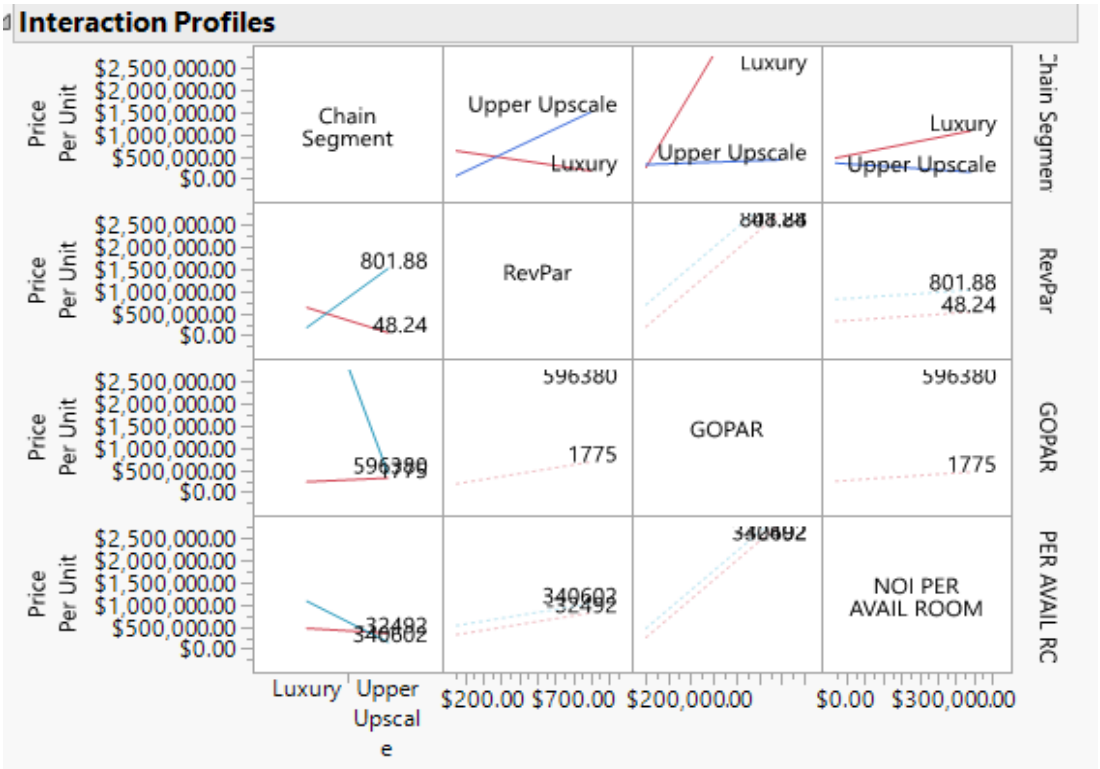


Figure 4.7. Interaction plot for overall chain effect on mean sales price per room when crossed against covariates

Hypothesis for Location

H_0: There is no effect due to location on sales price.
H_a: There is effect due to location on sales price.

An analysis of covariance was conducted to test differences due to location of hotels. The hotel sales transaction data were collected from eight of the ten largest metro US markets (Boston, NYC, Washington, Chicago, LA, Dallas, Houston, and Miami). A model was fit to test for the interactions between sales price and location. However, due to the low number of observations, the model was unable to estimate the parameters. As indicated in Table 4.14, the interactions did not reveal significance for location (MSA). Based on the analysis, it was found that the effect of MSA (location) on hotel price was not significant, (p-value = 0.9307) and indicated a failure to reject the null hypothesis.

Table 4.14. ANCOVA results for Location and Sales Price when controlling for RevPAR, GOPAR, and NOI per Room

Source	DF	Sum of Squares	*F* Ratio	*p* -Value
MSA	7	1.506e+11	0.3478	0.9307
RevPAR	1	2.5902e+12	41.8533	<.0001
GOPAR	1	1678039695	0.0271	0.8694
NOI Per Room	1	1.2811e+10	0.2070	0.6497

A multiple comparison test using the Tukey method was also completed, however, no significance among locations was indicated. Once again, a parametrization test was conducted and, as indicated in the effects tests shown in Table 4.14, MSA was not significant. The *R*-Square for the model was 0.4432 and the *F*-Ratio was reported at 12.9541.

Hypothesis for Time

H_0: There is no effect due to time on sales price.
H_a: There is effect due to time on sales price.

An analysis of covariance was conducted to test differences due to the date of sale (Year) of the hotels. A model was fit to test the interactions between Year and Sales Price when controlling for RevPAR, GOPAR, and NOI per Room. Similar to location (MSA), due to the low number of observations by year, the model was unable to estimate the parameters. As indicated in Table 4.15, the interactions were not significant. In addition, as indicated in Table 4.15, the interactions did not provide significance for time (date of sale). Based on the analysis, it was found that the effect of Time (date of sale) on hotel price was not significant, (*p*-value = 0.5763) and indicated a failure to reject the null hypothesis.

Table 4.15. ANCOVA results for Time and Sales Price when controlling for RevPAR, GOPAR, and NOI per Room

Source	DF	Sum of Squares	*F* Ratio	*p* -Value
Time	10	5.2035e+11	0.8553	0.5763
RevPAR	1	2.9657e+12	48.7451	<.0001
GOPAR	1	6718586380	0.1104	0.7401
NOI Per Room	1	3024006450	0.0497	0.8238

A multiple comparison test using the Tukey method was completed, however, no significance for Year (date of sale) was indicated. A parametrization test was conducted and, as indicated in the effects tests shown in Table 4.14, Year (date of sale) was not significant. The *R*-Square for the model was 0.4707 and the *F*-Ratio was reported at 12.1065.

Summary of the Results

A descriptive review of the sample data indicated that the sales prices of branded and non-branded hotels followed the economic cycle of the overall United States during the period 2007 through 2017. Similar to the general population of hotels monitored by STR, the non-branded hotels were smaller in size and achieved higher ADRs when compared to branded hotels. Among the branded hotels, there were no surprises as Marriott hotels

comprised half (50%) of the sample. The average annual occupancies, ADR's and RevPAR's of branded and non-branded hotels varied slightly throughout the 2007 to 2017 period, however, both branded and non-branded hotels exhibited positive upward trends from 2007 to 2017. The same was true when measuring the annual averages for GOPAR and NOI per Room for the analysis period. When analyzing correlations, a positive relationship existed between ADR and RevPAR, which was reasonable as ADR is used in developing RevPAR and changes in ADR impact calculated RevPARs. A strong relationship between GOPAR and NOI per Room also existed. NOI is derived by subtracting fixed charges from GOP. The Univariate Regression Analysis revealed that occupancy, ADR, RevPAR, GOPAR and NOI per Room were all significant factors in determining price per room; however, branding was not as significant in determining hotel sales price.

With the exception of the RevPAR and luxury chain scale classification, the null hypotheses were supported for effects of branding, time and location. From the tests conducted and the indicated *p*-values in the aforementioned sections, there was no impact on sales prices between branded and non-branded properties. For RevPAR, the null hypothesis was rejected as RevPAR was significant on hotel sales prices, for the reasons previously stated. As it relates to time and location, the statistical testing resulted in a failure to reject the null hypotheses for these covariates. For the luxury classification, the null hypothesis was rejected as this classification was significant on hotel sales prices.

The ANCOVA indicated that when testing covariates for significance on impact of sales price in brand and non-branded hotels, RevPAR was a significant factor. Furthermore, RevPAR and GOPAR were revealed to be significant as a predictor in the luxury chain scale

properties. Finally, there were no relationships noted when testing for location and time of sale.

CHAPTER 5. CONCLUSIONS

Chapter 5 provides a summary and interpretation of the results presented in Chapter 4, and context relative to previous research and analysis. The discussion and conclusions are addressed in accordance with the literature review and hypothesis tests. The section includes summary and discussion, implications, limitations, and proposals for future research.

Summary and Discussion

The cycle of commercial real estate investment continues as a mechanism for building wealth. Hotels, as operating businesses, are considered to have a higher business value component to their overall value and, as such, are considered as highly specialized investments and often misunderstood. Generally, institutional investors maintain portfolios of hotel investments which approximate ten percent of their overall commercial real estate investment portfolios. As noted in the CBRE and STR data, lodging supply continues to increase in size. Branded and non-branded hotels continue to occupy a steady ratio of the overall lodging supply. Similar to traditional valuation methodology, the research contained herein indicated that the performance of RevPAR is a significant predictor of hotel sales prices. In the Univariate Regression Analysis, all of the variables (RevPAR, GOPAR, NOI per Room) were significant. With the exception of the chain scale test, for the ANCOVA analyses, it was surprising that neither NOI per Room nor GOPAR factors were significant in predicting hotel sales prices. When testing as a predictor of sales price, NOI per Room contained a *p*-value of 0.0974, above 0.05 the standard level for measuring significance.

The objectives of the research were to investigate branding and its impact on sales price and examine if there were relationships between certain factors (occupancy, ADR, RevPAR, location, chain scale) and sales price. In order to ascertain if relationships existed,

frequency distributions were developed and examined and a series of tests were conducted using ANOVA and ANCOVA statistical testing. The most significant factor that was revealed pertained to RevPAR testing as a significant factor in predicting sales prices in almost every test.

The purpose of the research was to examine the impact of branding on hotel sales prices and also determine the impact (if any) of other factors. Prior research has been mostly focused on the contribution from various branded hotels (O'Neill & Xiao, 2006) and the role of brand affiliation in hotel market value. Findings of the O'Neill and Xiao study indicated that different brands do contribute differently to hotel market value.

The data collected were from the top eight metropolitan statistical areas during the period 2007 through 2017, and the observations were limited to geographic areas and points in time within a 10-year period. The descriptive analysis of the data of the annual sales frequency and annual sales prices per room indicated that for branded and non-branded hotels, the frequency of sales and the average sales price per room followed similar trends. This suggests that while there are a greater number of sales of branded hotels annually, that is likely a function of the available hotels for sale. The average sales prices per room trended and generally followed the overall U.S. economic cycle as presented by CBRE. The "great recession" was illustrated by the economic cycle graph in Chapter 4. The availability of hotels for sale, the hesitancy of investors to invest and the lack of capital for financing all likely contributed to the downturn in sales of hotels during 2008 and 2009. Further exacerbating the slow-down was the general unknown future of the capital markets during the 2008-2009 period.

The results from the analyses as presented in Chapter 4 indicated that only RevPAR was significant. However, when testing for inferences between chain scale and the covariates, luxury chain scale and RevPAR and GOPAR were significant. Occupancy and ADR may not be significant as stand-alone indicators of performance; however, when combined to form RevPAR, they provide a powerful metric. RevPAR contributes to the development of hotel revenues and cash flows, ultimately leading to a cash flow analysis. GOPAR was not significant when considered by itself, and this may have been due to variations and the unpredictability of GOPAR depending on the ability of ownership to control expenses. Each investor, owner, property manager and general manager has well-developed ideas on how to best manage expenses. Their levels of success vary as can be noted in the data table provided in Table A.1 in the Appendix which presents GOP percent. Due to the large number of assumptions that were considered in deriving the departmental and undistributed operating expenses, it is likely that both of these can be considered to contain too much uncertainty with which to make logical and substantiated conclusions for GOPAR as well as NOI per Room.

Considering that occupancy, ADR, RevPAR, GOPAR, and NOI per Room all interact with brand versus non-brand and chain scale, an interaction table presenting correlations was prepared. As expected, the strongest relationship was between ADR and RevPAR (0.9675) as presented in Table 4.8. ADR is part of the equation when combined with occupancy to develop RevPAR. ADR and RevPAR also exhibited a moderately strong relationship when correlated with sales price per room at (0.6510 and 0.6242, respectively) as presented in Table 4.8. The correlation between GOPAR and NOI per Room was stronger at 0.8435 and, this again, may likely be due to the relationship between these two variables. NOI per Room

is derived by taking GOPAR and subtracting Taxes and Insurance each per room. The correlations highlight the strength between the relationships and provide support to the importance that investors place on RevPAR and GOPAR and the variables that these data support.

The *p*-values for the Univariate Regression Analysis were all significant. This indicated that occupancy, ADR, GOPAR and NOI per Room (all were <0.0001, except NOI per Room which was 0.0044) and considered to be statistically significant as well as when considered singularly. These variables are all considered significant predictors of sales price for branded and non-branded hotels.

The ANCOVA statistical test, which tested for the impact of branding on sales price when controlling for RevPAR, GOPAR and NOI per Room, indicated that only RevPAR was statistically significant. This highlights the power of RevPAR, and supports the reliance on it throughout underwriting, analyses, and lending.

GOPAR is considered significant when testing for the luxury chain scale. This could be due to the position of the luxury chain scale segment at STR at the highest level of brand averaged ADR. Chain scales are determined by the ADR achieved by the brand. This might indicate that investors rely on GOPAR when considering investment in a "higher-end" property that has a higher ADR. For example, when analyzing a high ADR Four Seasons Hotel, the RevPAR and GOPAR would be analyzed versus if analyzing a Hampton Inn hotel or any hotel that has an ADR at the lower end of the spectrum. It would also be likely that the luxury chain scale segment property is significantly more complicated from an operations perspective. Higher end luxury chain scale properties have many food and beverage operations and options for guests. The luxury chain scale properties typically also offer

numerous amenities like golf, spa, swimming. Amenities require additional accounting and provide numerous challenges to the operator. The greater number of food and beverage outlets and amenities contained in the Four Seasons hotel operation versus the Hampton Inn operation, which is essentially a "rooms only" operation, leads investors to more sophisticated and greater detail in their analyses; hence reliance on GOPAR performance. The more complicated nature of the Four Seasons Operations would require that the investor examine additional components to the operation and all of these components would likely impact the gross operating profit. In determining the sales/purchase price the owner/investor of an economy or select service property may consider to place greatest reliance on RevPAR performance and future potential when conducting their analysis. Including chain scales outside of luxury and upper upscale were not a part of this research.

Implications

There were multiple tests undertaken which suggested that RevPAR as a predictor of sales price in both branded and non-branded hotels was significant. Conversely, in the same tests there were multiple implications of this research which suggested there was not a statistically significant relationship between occupancy, ADR, GOPAR and NOI per Room as predictors of hotel sales prices in both branded and non-branded hotels. Current literature has indicated that investors and analysts place a significant amount of importance on the Discounted Cash Flow (DCF) Technique (McKinley 2013) within the Income Approach to Value. Investors and analysts also both use and rely heavily on the DCF method and a direct capitalization method to determining a sales and acquisition pricing. In order to develop a DCF, an analysis of occupancy, ADR and RevPAR are developed. Prior to developing GOPAR and NOI per Room, room revenue is derived. The derivation of room revenue is the

result of an analysis of RevPAR. For RevPAR, historical performance against a competitive set of properties (STR provides the data) is analyzed. Prospective RevPAR performance is determined based on the anticipated performance of the hotel and the market overall. This exercise is fundamental to estimating GOPAR and NOI per Room.

The implications of the research are broad and reach hotel buyers, sellers, lenders, analysts, consultants, students and the academic body of knowledge. Buyers and sellers are looking to maximize their returns for the investors. This research provides clues to the impact of branding on investor interest and investment returns. While not being addressed specifically, investors can use the results of this research and apply them to their own underwriting analysis and expected returns. This ultimately impacts their investment interest. As branding is not a predictor of hotel sales price with a *p*-value of 0.6369 (Table 5.1), investors may place less emphasis on the assurance a brand brings to an investment, investors may discount the contribution of the brand, and investors may conversely place a lower premium on the value attributed to a hotel that is unencumbered by a franchise agreement.

Since branding is a not a significant predictor to sales price, a lender may not place as great as emphasis on the assurance of income derived from the "steady" stream of reservations offered by a Marriott of Hilton brand. Furthermore, a lender may not offer

Table 5.1. Overall brand effect on mean price per room

Variable	Estimate	Standard Error	*t* Ratio	*p*-Value
Intercept	44628595	16668761	2.68	0.0081
1=brand 2=nobrand	4415027.3	9338905	0.47	0.6369
RevPAR	365678.97	78146.59	4.68	<.0001*
GOPAR	-470.0248	328.5509	-1.43	0.1542
NOI Per Room	781.46475	469.0816	1.67	0.0974

better loan terms to a branded property over a non-branded property. Maybe all this is already happening in the market and, therefore, providing support for the lack of influence of brands on hotel value?

RevPAR was significant in this research, however, a difference between branded and non-branded hotel RevPAR exists. This could be due to several reasons. Since RevPAR is derived as a combination of occupancy and ADR, it is highly sensitive to fluctuations and changes in occupancy and ADR. In both cases and as presented in the descriptive section of Chapter 4, non-branded hotels outperformed branded hotels in both occupancy and ADR. Therefore, it is reasonable that RevPAR at non-branded hotels also exceeds the RevPAR achieved at branded hotels and the analysis in Chapter 4 supports this conclusion.

Investors, lenders and analysts estimate hotel sales prices by utilizing several different techniques (mostly cash flow analysis via the Income Approach) (McKinley 2013). As mentioned in the preceding paragraphs, for buyers and sellers of hotels who are determining the sales prices of hotels, the development of a cash flow built upon the expected RevPAR performance of a hotel is of importance. Once again, this draws attention to the importance and usefulness of RevPAR in determining hotel sales prices.

The ANCOVA analyses in this research did not appear to show a statistically significant relationship between occupancy, ADR, GOPAR, and NOI per Room as predictors in sales prices of branded and non-branded hotels. The lack of emphasis of these variables on sales prices indicates that buyers and sellers of real estate are first establishing their own assumptions of revenue performance through a RevPAR analysis. Subsequent to this, they are likely developing their own measures of GOPAR and NOI per Room measures. The

implication of this test is that RevPAR performance is considered important in hotel sales prices, and much more so than any other variables.

An additional implication of the analysis may be broader. Industry experts, consultants and investment analysts' research may imply a stronger relationship of ADR to RevPAR as noted in the correlation tables. While commentary from individual investors was not possible nor was it a part of this research, future research may find it beneficial in solving for additional attributes of analysis that are considered important to buyer and sellers of hotels.

The third implication to be highlighted in this study illustrates brands, branding and independent hotels remain relevant and are important characteristics when determining whether and how much to pay for a hotel (Bardoul, 2018). Research that has been completed on branding and market value was based on data and trends from prior to 2006, and was based on current market trends and investor preferences. The research was not targeted towards upper upscale and luxury properties. The purpose of this research was to investigate the impact of branding on hotel sales prices with current market data.

Pragmatically, this research was intended to expand the body of knowledge in hotel branding and hotel sales prices, and to assist hotel investors in underwriting hotel acquisitions and executing disposition plans. Frequently, investors will analyze a deal and place great importance on the lack of branding, as the lack of brand provides a new owner with significant flexibility to either remain non-branded or to select and negotiate a new brand. This research suggests that there is no direct relationship, and that investors should instead be focused on RevPAR and the business plan to increase RevPAR, and the resulting cash flow of the hotel.

Finally, considering the lack of research and academic study on the impact of brand versus non-branded hotels on sales prices and the concluded importance of RevPAR as a predictor in hotel sales prices, estimating prospective RevPAR is of critical importance. This analysis augments to the academic literature on this important industry metric and should be useful to students and investors in hotels as they analyze deals and consider additional metrics on which to evaluate. Caution, however, must be applied to readers and users of this research as they should be wary of changes in the industry that might lead to other covariates becoming significant predictors of sales prices.

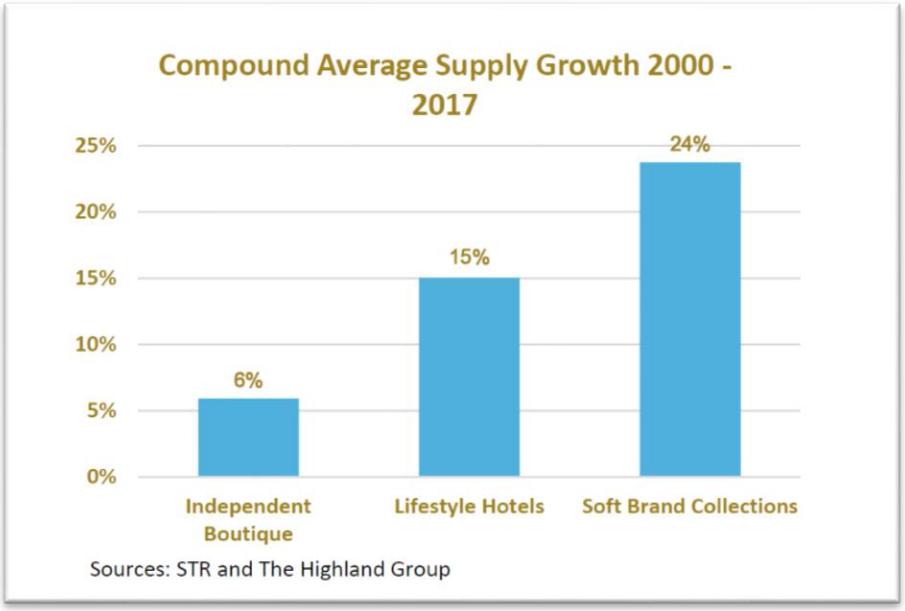
Limitations

The research was primarily directed to the hotel investment and academic communities. To the best of the researcher's knowledge, this study is one of the only studies focused on hotel branding, and whether branding or non-branding contributes to hotel sales prices. While the research on brands overall and brand contribution to value (O'Neill & Xiao, 2006) indicates a relationship, the brand versus non-branded as an indicator on hotel sales prices is not significant.

In terms of limitations of the findings, with the exception of RevPAR, there was not a particularly strong relationship between branding and the dependent variables that were selected. It may be possible that the research model may have included the incorrect variables or that the research could be expanded to include additional variables that would provide more insightful results. For example, in addition to the variables chosen, including capitalization rates may have provided additional insights. Hotel investors often measure their return by deriving the capitalization rate (net operating income divided by sales prices or value). The challenge with capitalization rates may lie in the definition of NOI. Has the

NOI been calculated before or after a deduction of reserves for replacement; and is the capitalization rate based on the most recent historical performance or a prospective estimate? Rather than speculating what was used to develop the NOI provided by CBRE, GOPAR was also utilized. A clearly defined NOI, with a precise understanding of the period captured (based on historical net operating income), would have made sense to use. However, this level of precise data did not exist.

Another predictor variable that might have been relevant to determining the impact of brand and non-branded hotels on sales prices might have been to expand the research to include a third branding category of "soft brands". According to the 2018 Boutique Lodging Report (Bardoul, 2018), soft brand collections have increased 24% on a compound annual average during the period 2000-2017 as noted in Figure 5.1. As the large hotel branding companies strategize on how to remain competitive with non-branded hotels and trends and preferences of the consumer, the growth in soft brands may add further insight and relevance.



Reprinted from The Boutique Hotel Report, 2018

Figure 5.1. Boutique Lodging 2018 Report: Compound average supply growth 2000-2017 independent boutique, lifestyle hotels, soft brand collections

Recommendations for Future Research

This study identified the relationship between branded and non-branded hotels and the variables of occupancy, ADR, RevPAR, GOPAR, NOI per Room, location, chain scale at different points in time with result that RevPAR as predictor of sales price was significant. This study could provide other researchers with a research framework for testing and confirming the relationships between RevPAR and investor preferences, investor underwriting models and other independent economic variables. These results and findings from this study can be further disseminated through peer-review publications and conference presentations.

This study examined the relationship of branded versus non-branded hotels and various variables. Considering the growth in "soft brands", future researchers may want to consider a third category of soft brands and their sales prices and relationship with occupancy, ADR, RevPAR, GOPAR, and NOI per Room. Given this study examined the period from 2007 through 2017, future researchers may want to extend the time period to the present, to fully capture the evolution of independent hotels in the US and the further evolution of soft brands. This research and the time frame of 2007 to 2017 attempted to capture a full economic cycle. It may be insightful to capture multiple economic cycles as recessions are not always result of similar causes. The causes of the recession may be impactful toward hotel sales prices. Furthermore, economic volatility, along with a longer time period, could change the outcome of this research analysis and provide additional meaningful indications. This research also considered existing operating hotels. This study excluded "pre-sales" (properties under construction that transfer from seller to buyer once the construction is complete and the property commences operating as a hotel), nor did it include

properties that were open for less than one year. Additional research including these sales may be insightful.

Another area for future research could be to examine other or additional geographic markets. As the proliferation of independent hotels spreads to metro areas like Nashville, Charlotte, Richmond, Cincinnati, and Denver (essentially the top 50 metro areas), and using the current study as a framework, the results would broaden the representation of the sample size and might change the predictions.

As noted in the analysis section of this research, there have been no known studies that classify hotels by room size as either branded or non-branded. Perhaps it is time to segment properties based on room count and analyze the behavior and performance of these hotels and the investment interest. In addition, also noted in the analysis section of this research, there may be numerous outside forces that influence purchasers of non-branded hotels. The area pertaining to influencers of investors could further illuminate purchasing behavior.

As the evolution and desire among younger travelers to experience individualized travel continues, traditional lodging market capital cities like New York City, Boston, Los Angeles, Washington DC, Chicago, Dallas, Houston, and Miami may not provide the greatest frequency of options for travelers seeking independent lodging accommodations. Buyers and sellers of hotels will continue to examine RevPAR and its impact on the operations and resulting NOI. RevPAR will likely continue to be the strongest predictor of hotel sale prices, regardless of brand, market, and sales date.

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Table A.1. The impact of branding on hotel sales prices: A study of upper upscale and luxury hotel properties from 2007 through 2017 (sales data)

Chain Scale	MSA	Year	1 B, 2 NB	Rooms	Age Yrs	Sales Price	Price /Unit	GOP %	Occupancy	ADR	RevPAR	GOPAR	NOI	NOI/Room
Luxury	NYC	2015	2	391	7	$ 102,300,000	$ 261,637	24.93%	78.30%	$498.48	$390.29	$44,206	$8,075,654	$20,681
Upper Upscale	NYC	2016	2	132	55	$ 71,848,380	$ 544,306	44.31%	90.98%	$326.23	$296.79	$49,391	$4,407,122	-$4,062
Upper Upscale	Chicago	2016	2	122	122	$ 28,420,000	$ 232,951	27.47%	80.75%	$213.45	$172.35	$24,302	-$93,123	-$763
Upper Upscale	NYC	2011	1	618	88	$ 54,460,585	$ 88,124	45.23%	71.22%	$247.07	$175.96	$30,156	$13,142,497	$986
Upper Upscale	Miami	2015	2	241	92	$ 57,666,667	$ 239,281	38.40%	85.80%	$137.28	$117.79	$17,608	$3,182,079	$13,204
Upper Upscale	DC	2007	1	205	30	$ 27,500,000	$ 134,146	6.56%	57.92%	$91.01	$52.72	$1,775	-$139,221	-$7,107
Upper Upscale	LA	2011	1	570	62	$ 300,000,000	$ 526,316	26.66%	75.36%	$232.43	$175.15	$33,422	$14,706,451	$15,265
Upper Upscale	Chicago	2016	2	332	108	$ 58,500,000	$ 176,205	21.71%	73.55%	$211.62	$155.64	$19,678	$45,424,136	$123,855
Upper Upscale	Boston	2007	1	412	35	$ 231,000,000	$ 560,680	43.71%	83.34%	$261.82	$218.20	$48,118	$16,046,291	$38,947
Upper Upscale	Boston	2010	1	257	28	$ 11,500,000	$ 44,747	14.42%	61.19%	$111.08	$67.96	$5,256	$827,482	$3,220
Upper Upscale	Boston	2007	1	464	17	$ 119,000,000	$ 256,466	37.78%	74.02%	$145.59	$107.77	$23,349	$8,872,951	$19,123
Upper Upscale	DC	2007	1	1070	52	$ 286,166,183	$ 267,445	35.90%	77.88%	$181.27	$141.17	$32,474	$26,432,968	$24,704
Upper Upscale	DC	2007	2	657	92	$ 260,000,000	$ 395,738	30.78%	72.40%	$236.20	$171.01	$29,914	$15,115,167	$23,006
Upper Upscale	Chicago	2016	1	184	13	$ 22,500,000	$ 122,283	32.53%	72.05%	$147.00	$105.90	$17,819	$2,252,444	$7,379
Luxury	Chicago	2014	2	254	56	$ 25,500,000	$ 100,394	9.41%	75.10%	$310.65	$233.29	$11,813	-$45,711	-$180
Upper Upscale	Dallas	2015	1	547	35	$ 55,700,000	$ 101,828	34.28%	60.22%	$113.08	$68.09	$12,890	$5,494,865	$10,045
Upper Upscale	LA	2013	1	226	8	$ 12,000,000	$ 53,097	27.31%	58.66%	$288.72	$169.35	$121,875	$21,187,735	$93,751
Upper Upscale	Houston	2017	1	314	36	$ 43,810,000	$ 139,522	33.61%	47.60%	$116.35	$55.38	$9,632	$17,892,489	$51,807
Luxury	NYC	2007	2	45	11	$ 24,750,000	$ 550,000	36.33%	66.64%	$326.29	$217.43	$29,806	-$1,254,005	-$27,867
Upper Upscale	NYC	2016	2	252	31	$ 127,499,977	$ 505,952	39.62%	91.91%	$240.35	$220.92	$32,777	$5,506,683	$6,663
Upper Upscale	LA	2007	2	50	46	$ 10,100,000	$ 202,000	27.03%	72.74%	$179.27	$130.41	$14,325	$398,676	$4,745
Upper Upscale	Boston	2009	1	275	29	$ 20,200,000	$ 73,455	37.96%	79.21%	$155.79	$123.40	$22,464	$5,131,208	$18,659
Upper Upscale	DC	2016	1	447	13	$ 85,100,000	$ 190,380	40.43%	65.38%	$174.12	$113.84	$35,154	$12,342,124	$27,611
Upper Upscale	DC	2007	1	316	29	$ 73,000,000	$ 231,013	45.00%	79.29%	$133.30	$105.70	$25,776	$5,969,597	$18,891
Upper Upscale	LA	2012	1	156	10	$ 19,600,000	$ 125,641	35.84%	80.12%	$111.23	$89.12	$13,775	$1,141,000	$7,314
Upper Upscale	LA	2015	1	156	1810	$ 30,000,000	$ 192,308	35.84%	80.12%	$111.23	$89.12	$13,775	-$271,863	-$1,743
Upper Upscale	DC	2017	1	316	31	$ 41,800,000	$ 132,278	30.68%	76.81%	$179.28	$137.70	$37,696	$8,614,873	$27,262
Luxury	Dallas	2017	1	551	48	$ 69,000,000	$ 125,227	29.54%	61.39%	$147.69	$90.66	$17,365	$7,680,836	$7,792
Luxury	Chicago	2016	1	692	30	$ 444,047,892	$ 641,688	27.97%	63.86%	$232.46	$148.46	$25,015	$12,768,291	$18,451
Upper Upscale	DC	2014	1	1348	99	$ 52,000,000	$ 38,576	22.52%	70.70%	$196.01	$138.59	$16,567	$16,143,121	$11,976
Upper Upscale	DC	2007	1	234	33	$ 53,700,000	$ 229,487	37.81%	72.03%	$145.57	$104.85	$38,036	$7,330,672	$31,328
Luxury	NYC	2016	2	209	90	$ 113,250,925	$ 541,870	25.77%	90.16%	$327.79	$295.55	$41,478	$5,080,639	-$6,684
Luxury	Miami	2017	1	221	14	$ 44,250,000	$ 200,226	17.32%	63.14%	$270.15	$170.57	$20,170	$2,454,478	$11,106
Luxury	DC	2016	2	222	38	$ 218,254,000	$ 983,126	32.01%	70.35%	$638.44	$449.15	$104,508	$16,665,609	$75,070
Upper Upscale	NYC	2010	2	280	7	$ 121,800,000	$ 435,000	46.91%	97.80%	$253.38	$247.80	$44,432	$8,696,102	$28,785
Upper Upscale	DC	2012	1	406	35	$ 153,000,000	$ 376,847	46.27%	73.25%	$193.77	$141.93	$29,512	$9,080,588	$22,366
Upper Upscale	Miami	2017	2	650	32	$ 48,612,500	$ 74,788	35.36%	75.34%	$215.44	$162.33	$42,646	$21,100,337	$32,462
Upper Upscale	Dallas	2015	2	201	50	$ 47,900,000	$ 238,308	18.32%	65.35%	$192.26	$125.65	$13,559	$1,307,023	$2,075
Upper Upscale	Dallas	2009	2	198	42	$ 48,000,000	$ 242,424	65.00%	68.00%	$275.00	$187.00	$59,155	$4,504,867	$22,752
Upper Upscale	Dallas	2011	2	198	42	$ 53,000,000	$ 267,677	65.00%	68.00%	$275.00	$187.00	$59,155	$4,504,867	$22,752
Upper Upscale	DC	2014	1	154	11	$ 35,286,529	$ 229,133	21.25%	68.10%	$110.92	$75.53	$6,695	$484,226	$3,144
Upper Upscale	NYC	2016	1	210	56	$ 113,792,796	$ 541,870	43.72%	92.51%	$265.44	$245.55	$51,101	$7,352,077	-$12,846
Luxury	NYC	2007	1	1980	51	$ 765,000,000	$ 386,364	30.73%	90.13%	$204.21	$184.06	$11,907	$13,200,105	$6,858
Upper Upscale	Dallas	2011	1	308	34	$ 46,000,000	$ 149,351	37.55%	74.12%	$137.56	$101.96	$19,500	$4,647,284	$8,348
Upper Upscale	Boston	2015	1	390	35	$ 16,683,474	$ 42,778	52.07%	85.21%	$244.68	$208.49	$47,640	$6,227,750	$15,969

Table A.1. (Continued).

Chain Scale	MSA	Year	1 B, 2 NB	Rooms	Age Yrs	Sales Price	Price /Unit	GOP %	Occupancy	ADR	RevPAR	GOPAR	NOI	NOI/Room
Upper Upscale	Boston	2011	1	390	35	$ 54,307,918	$ 139,251	48.62%	86.44%	$193.51	$167.27	$37,629	$11,486,618	$29,453
Upper Upscale	Boston	2015	1	344	29	$ 32,119,000	$ 93,369	37.30%	61.95%	$127.66	$79.08	$13,548	$3,493,657	$6,152
Upper Upscale	DC	2007	1	267	32	$ 74,886,472	$ 280,474	47.61%	80.97%	$195.30	$158.14	$31,521	$7,045,796	$26,389
Upper Upscale	Dallas	2017	1	500	41	$ 72,250,000	$ 144,500	34.30%	63.57%	$132.39	$84.16	$17,954	$6,772,664	$13,542
Upper Upscale	Dallas	2011	1	224	16	$ 56,100,000	$ 250,446	36.00%	76.33%	$167.16	$127.59	$23,127	$3,962,223	$17,688
Upper Upscale	LA	2017	1	351	27	$ 74,000,000	$ 210,826	33.39%	79.74%	$135.09	$107.72	$29,088	$7,636,352	-$9,759
Upper Upscale	DC	2015	1	495	9	$ 65,600,000	$ 132,525	29.66%	80.67%	$200.49	$161.74	$7,689	$3,188,128	$6,441
Upper Upscale	DC	2011	1	495	9	$ 121,000,000	$ 244,444	29.66%	80.67%	$200.49	$161.74	$7,689	$3,188,128	$6,441
Luxury	NYC	2010	1	270	106	$ 188,000,000	$ 696,296	37.55%	89.68%	$364.00	$326.44	$56,468	$10,603,473	$18,849
Upper Upscale	DC	2013	1	107	9	$ 22,021,335	$ 205,807	27.98%	81.11%	$188.47	$152.87	$34,804	$2,821,133	$15,111
Upper Upscale	Chicago	2013	1	269	37	$ 34,080,000	$ 126,691	37.91%	74.19%	$167.91	$124.58	$23,958	$4,218,406	$15,682
Upper Upscale	NYC	2009	1	347	40	$ 29,500,000	$ 85,014	15.41%	60.26%	$142.21	$85.69	$7,593	$1,456,330	$4,197
Upper Upscale	Houston	2016	1	297	37	$ 65,100,000	$ 219,192	33.13%	68.47%	$128.63	$88.07	$17,106	$3,418,706	$4,275
Upper Upscale	Miami	2013	2	200	67	$ 65,000,000	$ 325,000	40.15%	80.96%	$160.51	$129.95	$21,990	$1,811,205	$3,602
Upper Upscale	Chicago	2009	2	437	58	$ 37,000,000	$ 84,668	55.00%	60.00%	$185.00	$111.00	$23,456	$2,795,535	$6,397
Upper Upscale	Chicago	2007	2	483	127	$ 69,872,750	$ 144,664	24.35%	57.99%	$183.16	$106.21	$14,430	$1,514,474	$1,323
Upper Upscale	Chicago	2014	2	122	122	$ 35,200,000	$ 288,525	28.51%	79.01%	$205.15	$162.10	$24,750	-$43,769	-$359
Luxury	Boston	2014	2	149	14	$ 38,500,000	$ 258,389	41.15%	81.05%	$278.24	$225.51	$46,747	$5,537,688	-$14,807
Luxury	Boston	2012	2	149	14	$ 79,000,000	$ 530,201	36.78%	78.96%	$258.26	$203.92	$33,932	$4,047,372	$13,897
Luxury	Boston	2016	2	149	14	$ 82,710,204	$ 555,102	42.66%	79.21%	$287.63	$227.84	$74,588	$5,210,225	$34,968
Luxury	Houston	2016	2	314	38	$ 59,000,000	$ 187,898	34.16%	75.34%	$132.42	$99.77	$18,743	$4,844,946	$6,440
Luxury	DC	2017	2	237	82	$ 69,243,650	$ 292,167	45.00%	82.00%	$225.00	$184.50	$40,406	$6,809,674	$28,733
Upper Upscale	DC	2017	2	99	54	$ 28,924,563	$ 292,167	45.00%	72.00%	$245.00	$176.40	$38,632	$2,124,738	$21,462
Upper Upscale	DC	2017	2	343	49	$ 100,213,384	$ 292,167	45.00%	75.00%	$318.00	$238.50	$52,232	$7,962,402	$23,214
Luxury	Chicago	2008	1	192	105	$ 80,000,000	$ 416,667	44.72%	75.28%	$226.49	$170.50	$38,907	$4,950,423	$25,783
Luxury	Chicago	2013	1	192	105	$ 56,000,000	$ 291,667	35.33%	79.49%	$201.00	$159.76	$28,365	$3,848,623	$20,045
Luxury	LA	2014	1	264	45	$ 78,700,000	$ 298,106	46.98%	83.16%	$214.90	$178.72	$38,218	$4,314,900	-$5,976
Upper Upscale	DC	2015	2	470	37	$ 113,000,000	$ 240,426	36.52%	76.45%	$187.13	$143.06	$24,182	$7,409,352	$15,765
Upper Upscale	LA	2017	2	74	67	$ 36,000,000	$ 486,486	51.73%	84.86%	$270.53	$229.59	$47,006	$2,564,411	$18,519
Upper Upscale	Houston	2017	1	206	8	$ 50,750,000	$ 246,359	20.76%	44.04%	$117.65	$51.81	$4,787	-$239,368	-$1,162
Upper Upscale	DC	2015	1	184	8	$ 15,129,369	$ 82,225	29.63%	73.37%	$96.64	$70.90	$8,519	$1,122,702	$6,102
Upper Upscale	DC	2013	1	407	37	$ 42,500,000	$ 104,423	25.62%	60.87%	$132.07	$80.40	$12,642	$3,859,447	$9,483
Upper Upscale	DC	2007	1	215	29	$ 74,000,000	$ 344,186	65.00%	77.00%	$159.00	$122.43	$56,922	$4,707,025	$21,893
Upper Upscale	Boston	2009	1	498	33	$ 110,000,000	$ 220,884	38.81%	82.21%	$161.41	$132.70	$25,519	$8,766,528	$17,603
Upper Upscale	Boston	2010	1	498	33	$ 112,000,000	$ 224,900	43.60%	82.91%	$173.77	$144.07	$31,008	$11,219,387	$22,529
Upper Upscale	LA	2008	1	726	51	$ 366,500,000	$ 504,821	35.43%	79.30%	$225.81	$179.07	$42,831	$23,098,703	$31,816
Upper Upscale	Chicago	2007	1	470	36	$ 49,000,000	$ 104,255	34.03%	45.79%	$105.35	$48.24	$9,886	$2,893,728	$6,157
Upper Upscale	NYC	2009	2	334	90	$ 134,900,000	$ 403,892	55.00%	78.00%	$325.00	$253.00	$67,848	$8,240,200	$24,671
Luxury	Chicago	2016	1	792	88	$ 508,216,663	$ 641,688	33.31%	73.80%	$212.65	$156.93	$32,222	$18,213,044	$22,996
Upper Upscale	Chicago	2008	2	297	121	$ 136,600,000	$ 459,933	30.83%	65.87%	$238.59	$157.17	$30,294	$5,778,287	-$26,100
Upper Upscale	Chicago	2017	1	483	91	$ 85,950,250	$ 177,951	21.81%	72.34%	$182.72	$132.19	$14,846	$5,215,207	$10,798
Luxury	LA	2016	1	342	27	$ 485,000,000	$ 1,418,129	35.97%	78.27%	$383.57	$300.22	$58,421	$17,095,425	$49,987
Upper Upscale	LA	2014	1	1004	44	$ 160,000,000	$ 159,363	30.23%	88.72%	$130.38	$115.67	$20,062	$15,026,339	$14,966
Upper Upscale	LA	2010	1	469	26	$ 62,600,000	$ 133,475	15.35%	73.89%	$136.71	$101.01	$8,220	$1,505,749	-$1,048
Upper Upscale	LA	2013	2	485	44	$ 40,144,857	$ 82,773	15.78%	74.78%	$159.30	$119.12	$8,395	$2,028,810	$1,010

Table A.1. (Continued).

Chain Scale	MSA	Year	1 B, 2 NB	Rooms	Age Yrs	Sales Price	Price /Unit	GOP %	Occupancy	ADR	RevPAR	GOPAR	NOI	NOI/Room
Upper Upscale	NYC	2013	1	438	36	$ 21,500,000	$ 49,087	22.89%	81.74%	$180.32	$147.39	$16,873	$2,959,527	$6,757
Upper Upscale	LA	2013	1	487	32	$ 74,000,000	$ 151,951	33.78%	84.30%	$116.06	$97.83	$16,873	$6,270,020	$12,875
Upper Upscale	Boston	2011	1	418	34	$ 64,975,222	$ 155,443	24.26%	68.32%	$141.82	$96.89	$14,051	$4,246,293	$10,159
Upper Upscale	Boston	2015	1	418	34	$ 94,250,000	$ 225,478	30.62%	80.45%	$169.03	$135.99	$23,369	$5,118,799	$11,760
Upper Upscale	Chicago	2017	1	398	34	$ 35,500,000	$ 89,196	45.00%	78.00%	$195.00	$152.10	$33,310	$4,419,113	$11,103
Upper Upscale	Boston	2017	1	464	16	$ 80,000,000	$ 172,414	45.00%	72.00%	$165.00	$118.80	$26,017	$5,365,325	$11,563
Upper Upscale	Houston	2017	1	304	40	$ 41,000,000	$ 134,868	39.09%	72.00%	$137.53	$99.02	$21,255	$5,142,893	$15,438
Upper Upscale	Houston	2015	1	304	40	$ 50,300,000	$ 165,461	37.53%	67.60%	$162.57	$109.90	$20,333	$4,778,184	$15,718
Luxury	NYC	2017	1	230	110	$ 600,000,000	$ 2,608,696	55.00%	90.00%	$275.00	$247.50	$66,248	$9,696,225	$42,158
Luxury	NYC	2011	2	188	87	$ 319,400,000	$ 1,698,936	43.71%	74.27%	$688.44	$511.32	$137,771	$10,827,600	$24,305
Upper Upscale	Boston	2016	2	189	16	$ 85,100,300	$ 450,266	39.63%	84.58%	$289.19	$244.59	$43,577	$5,935,417	$27,137
Luxury	NYC	2015	2	564	27	$ 382,000,000	$ 677,305	33.29%	78.40%	$424.52	$332.81	$46,542	$15,084,827	$2,663
Upper Upscale	Boston	2017	2	112	14	$ 50,446,502	$ 450,415	45.00%	72.00%	$325.00	$234.00	$51,246	$3,826,368	$34,164
Luxury	DC	2014	1	415	32	$ 180,000,000	$ 433,735	27.81%	61.35%	$267.53	$164.12	$25,787	$6,851,312	$6,903
Upper Upscale	DC	2014	1	210	28	$ 54,300,000	$ 258,571	37.40%	73.50%	$188.64	$138.65	$23,360	$3,692,406	$17,583
Luxury	NYC	2007	1	398	17	$ 169,602,273	$ 426,136	48.55%	87.15%	$399.26	$347.95	$74,737	$23,342,672	$58,650
Upper Upscale	Boston	2011	1	471	9	$ 132,000,000	$ 280,255	36.32%	79.63%	$258.30	$205.68	$40,233	$12,915,294	$27,421
Upper Upscale	Boston	2007	1	471	9	$ 163,000,000	$ 346,072	30.67%	74.71%	$199.18	$148.82	$25,811	$8,178,692	$17,365
Upper Upscale	Chicago	2013	1	553	26	$ 139,000,000	$ 251,356	36.86%	77.85%	$220.20	$171.43	$32,684	$13,197,053	$23,864
Upper Upscale	LA	2008	1	802	36	$ 97,000,000	$ 120,948	25.25%	90.16%	$114.50	$103.24	$13,573	$8,048,459	$2,700
Luxury	DC	2007	1	182	91	$ 153,000,000	$ 840,659	17.90%	71.65%	$376.47	$269.74	$27,148	$3,020,263	$16,595
Upper Upscale	DC	2015	1	240	67	$ 51,101,335	$ 212,922	50.33%	79.71%	$193.01	$153.86	$33,139	-$618,650	-$2,578
Upper Upscale	LA	2008	1	499	26	$ 65,000,000	$ 130,261	30.34%	81.68%	$117.87	$96.27	$15,276	$5,698,553	$11,420
Upper Upscale	Chicago	2007	1	385	46	$ 23,000,000	$ 59,740	38.75%	69.69%	$109.80	$76.52	$17,999	$4,743,061	$12,320
Upper Upscale	NYC	2007	1	444	36	$ 64,750,000	$ 145,833	37.51%	74.76%	$165.22	$123.52	$27,983	$9,035,162	$20,349
Luxury	Boston	2010	2	356	46	$ 143,500,000	$ 403,090	25.59%	73.13%	$401.57	$293.68	$42,878	$9,871,549	$27,729
Luxury	Boston	2014	2	356	46	$ 260,400,000	$ 731,461	35.81%	69.85%	$545.39	$380.98	$68,473	$18,108,268	$50,866
Upper Upscale	NYC	2011	1	447	44	$ 35,500,000	$ 79,418	13.17%	61.80%	$132.26	$81.73	$6,045	$837,592	$1,874
Luxury	DC	2015	1	222	38	$ 192,627,558	$ 867,692	30.88%	66.14%	$614.94	$406.70	$96,192	$15,833,748	$71,323
Upper Upscale	LA	2015	1	183	28	$ 45,000,000	$ 206,897	39.74%	89.59%	$143.89	$128.91	$30,150	$4,192,993	$19,904
Luxury	NYC	2017	2	169	117	$ 46,000,000	$ 272,189	19.61%	87.02%	$301.10	$262.03	$24,019	$3,019,168	$13,147
Upper Upscale	NYC	2017	2	169	54	$ 55,000,000	$ 325,444	35.24%	87.80%	$291.95	$256.33	$596,380	$57,561,743	$340,602
Luxury	NYC	2013	2	214	7	$ 229,000,000	$ 1,070,093	31.95%	72.90%	$755.00	$550.37	$106,741	$9,513,176	$4,131
Luxury	Miami	2014	2	129	12	$ 90,000,000	$ 697,674	48.83%	44.00%	$916.00	$403.04	$116,135	$2,394,277	$18,560
Luxury	NYC	2016	2	114	9	$ 70,000,000	$ 614,035	31.42%	86.92%	$373.15	$324.34	$42,728	$2,743,985	$24,070
Upper Upscale	DC	2016	1	184	29	$ 16,000,000	$ 86,957	29.97%	74.71%	$116.21	$86.82	$27,502	$2,968,563	$16,133
Luxury	LA	2012	1	1001	7	$ 61,288,500	$ 61,227	24.80%	70.51%	$435.38	$307.00	$6,034	$4,459,551	$4,455
Upper Upscale	LA	2011	1	451	48	$ 90,000,000	$ 199,557	23.05%	73.37%	$160.77	$117.95	$15,606	$4,702,843	$4,668
Upper Upscale	NYC	2007	1	438	36	$ 69,000,000	$ 157,534	28.75%	72.50%	$193.99	$140.65	$21,149	$6,235,365	$14,236
Upper Upscale	DC	2007	1	407	37	$ 92,100,000	$ 226,290	37.78%	64.96%	$169.27	$109.96	$26,252	$9,227,779	$21,391
Upper Upscale	Dallas	2015	1	434	43	$ 49,300,000	$ 113,594	34.04%	60.32%	$119.98	$72.38	$11,363	$3,440,017	-$135
Upper Upscale	LA	2007	1	385	26	$ 63,000,000	$ 130,261	23.16%	80.49%	$102.62	$82.61	$12,702	$3,189,583	$8,285
Upper Upscale	LA	2016	1	203	32	$ 42,000,000	$ 206,897	33.93%	73.14%	$139.53	$102.06	$17,357	$3,082,946	$15,187
Luxury	NYC	2013	1	150	10	$ 19,700,000	$ 131,333	16.34%	73.79%	$274.71	$202.71	$20,814	$1,846,434	$12,310
Upper Upscale	NYC	2014	1	150	10	$ 19,797,470	$ 131,983	36.52%	73.83%	$150.33	$110.99	$17,754	$1,842,790	$3,676

Table A.1. (Continued).

Chain Scale	MSA	Year	1 B, 2 NB	Rooms	Age Yrs	Sales Price	Price /Unit	GOP %	Occupancy	ADR	RevPAR	GOPAR	NOI	NOI/Room
Upper Upscale	Houston	2016	1	420	35	$ 68,000,000	$ 161,905	33.14%	75.73%	$88.81	$67.26	$11,439	$3,300,993	$7,207
Upper Upscale	DC	2010	1	395	29	$ 93,000,000	$ 235,443	65.00%	78.00%	$189.00	$147.42	$46,633	$7,084,693	$17,936
Upper Upscale	DC	2014	1	154	11	$ 11,300,000	$ 73,377	28.39%	63.79%	$119.03	$75.93	$9,181	-$656,461	-$4,263
Upper Upscale	DC	2011	1	154	11	$ 19,500,000	$ 126,623	28.39%	63.79%	$119.03	$75.93	$9,181	-$656,461	-$4,263
Upper Upscale	LA	2011	1	194	34	$ 34,800,000	$ 179,381	40.25%	79.66%	$127.06	$101.22	$15,393	$2,256,169	-$7,100
Upper Upscale	NYC	2015	2	655	94	$ 270,000,000	$ 412,214	30.33%	84.00%	$297.74	$250.09	$32,402	$12,557,401	$19,172
Luxury	NYC	2013	2	114	9	$ 84,600,000	$ 742,105	30.59%	85.49%	$402.87	$344.40	$66,614	$4,886,500	$42,944
Luxury	LA	2015	2	297	26	$ 195,000,000	$ 656,566	24.59%	81.06%	$373.55	$302.81	$51,300	$11,434,981	$38,502
Upper Upscale	NYC	2016	1	446	44	$ 33,262,588	$ 74,580	9.18%	73.02%	$139.01	$101.50	$5,865	$392,361	$880
Upper Upscale	NYC	2014	1	398	54	$ 265,000,000	$ 665,829	41.29%	91.28%	$310.14	$283.08	$290,644	$78,890,026	$196,930
Luxury	Chicago	2014	1	415	15	$ 153,000,000	$ 368,675	34.72%	80.45%	$221.38	$178.11	$31,229	$8,391,606	$20,221
Luxury	NYC	2010	2	198	106	$ 48,000,000	$ 242,424	34.51%	81.98%	$337.09	$276.35	$61,294	$7,932,208	-$32,492
Luxury	NYC	2016	1	184	103	$ 215,200,000	$ 1,169,565	27.03%	89.24%	$440.37	$392.99	$58,228	$8,381,304	$45,551
Upper Upscale	DC	2015	1	172	92	$ 32,000,000	$ 186,047	21.97%	72.70%	$220.87	$160.57	$79,011	$4,477,110	$26,030
Upper Upscale	DC	2011	1	173	111	$ 75,175,589	$ 434,541	56.41%	76.86%	$173.88	$133.65	$31,620	$4,419,038	$25,544
Upper Upscale	DC	2007	1	470	37	$ 81,556,040	$ 173,523	38.92%	66.69%	$198.65	$132.48	$22,339	$8,689,302	$18,488
Luxury	NYC	2011	2	113	91	$ 51,800,000	$ 458,407	13.12%	85.41%	$281.05	$240.04	$10,736	$574,457	$659
Upper Upscale	NYC	2016	2	325	90	$ 176,107,898	$ 541,870	42.08%	94.26%	$221.36	$208.66	$34,133	$7,356,949	-$6,892
Upper Upscale	DC	2015	2	144	34	$ 31,400,000	$ 218,056	50.40%	76.20%	$185.60	$141.42	$95,330	$4,085,535	$28,372
Luxury	DC	2014	2	216	31	$ 100,000,000	$ 462,963	24.61%	82.38%	$299.49	$246.72	$42,641	$6,423,139	$29,737
Luxury	NYC	2016	2	514	86	$ 302,849,000	$ 589,200	28.38%	84.03%	$449.39	$377.63	$54,003	$17,111,202	$33,290
Luxury	NYC	2017	1	114	31	$ 66,000,000	$ 578,947	29.95%	85.26%	$298.69	$254.67	$76,032	$8,030,251	$70,441
Luxury	NYC	2013	1	114	31	$ 84,000,000	$ 736,842	29.95%	85.26%	$298.69	$254.67	$76,032	$8,030,251	$70,441
Upper Upscale	LA	2008	2	207	61	$ 92,000,920	$ 444,449	34.46%	79.67%	$185.97	$148.16	$39,518	$1,577,605	$6,107
Luxury	DC	2011	2	240	67	$ 138,789,120	$ 578,288	45.48%	75.32%	$162.60	$122.47	$23,316	$4,103,449	$17,098
Luxury	DC	2012	2	888	31	$ 400,000,000	$ 450,450	45.31%	79.15%	$220.32	$174.38	$45,977	$28,391,969	$31,973
Upper Upscale	DC	2015	2	240	86	$ 52,300,000	$ 217,917	30.26%	68.91%	$188.43	$129.85	$79,799	$6,329,767	$26,374
Upper Upscale	LA	2007	2	469	34	$ 108,775,544	$ 231,931	25.24%	74.83%	$156.90	$117.41	$15,797	$4,683,107	-$299
Upper Upscale	DC	2008	2	355	37	$ 141,299,999	$ 398,028	37.84%	69.28%	$193.06	$133.75	$24,314	$6,477,163	$18,246
Luxury	NYC	2011	1	229	113	$ 26,600,000	$ 116,157	25.04%	72.85%	$920.82	$670.83	$107,476	$16,798,944	$69,800
Luxury	NYC	2016	1	229	114	$ 132,731,728	$ 579,615	18.66%	84.29%	$951.35	$801.88	$92,647	$10,750,460	$46,945
Upper Upscale	DC	2017	2	212	45	$ 61,939,468	$ 292,167	45.00%	68.00%	$218.00	$148.24	$32,465	$4,588,324	$21,643
Upper Upscale	NYC	2015	1	316	113	$ 162,064,000	$ 512,861	25.30%	84.83%	$278.87	$236.57	$22,866	$3,524,757	-$24,176
Luxury	NYC	2007	2	248	14	$ 278,000,000	$ 1,120,968	32.98%	76.34%	$936.83	$715.16	$138,143	$26,407,700	-$5,514
Luxury	LA	2016	2	342	28	$ 485,411,773	$ 1,419,333	35.13%	75.32%	$391.51	$294.88	$56,688	$15,830,166	$46,287
Luxury	Chicago	2012	1	520	52	$ 126,000,000	$ 242,308	35.94%	74.27%	$210.30	$156.19	$28,893	$11,957,440	$22,995
Upper Upscale	Chicago	2007	1	1544	90	$ 596,000,000	$ 386,010	33.66%	74.12%	$193.17	$143.17	$31,637	$32,136,661	$20,814

Table A.1. (Continued).

Chain Scale	MSA	Year	1 B, 2 NB	Rooms	Age Yrs	Sales Price	Price /Unit	GOP %	Occupancy	ADR	RevPAR	GOPAR	NOI	NOI/Room
Luxury	LA	2017	1	305	7	$ 219,000,000	$ 718,033	41.98%	84.40%	$313.44	$264.53	$57,609	$11,388,681	$37,340
Luxury	LA	2012	1	258	48	$ 125,000,000	$ 484,496	37.94%	85.62%	$272.22	$233.08	$46,663	$9,473,362	$36,718
Luxury	Chicago	2015	1	188	8	$ 111,900,000	$ 595,213	17.12%	76.09%	$425.10	$323.45	$30,932	$119,181	-$5,649
Upper Upscale	DC	2008	1	316	29	$ 78,000,000	$ 246,835	41.56%	81.88%	$143.75	$117.71	$25,814	$5,645,588	$17,866
Upper Upscale	DC	2007	1	152	64	$ 38,446,078	$ 252,935	62.50%	53.09%	$171.41	$91.00	$29,397	$1,693,840	-$10,087
Luxury	DC	2016	1	1070	14	$ 305,000,000	$ 285,047	18.09%	86.08%	$471.92	$406.25	$2,998	$1,995,134	$1,865
Upper Upscale	DC	2007	1	544	73	$ 259,338,704	$ 476,726	35.31%	77.25%	$218.51	$168.79	$32,005	$13,171,260	$24,212
Upper Upscale	NYC	2007	1	446	44	$ 73,465,215	$ 164,720	26.34%	63.40%	$178.25	$113.01	$17,730	$5,240,465	$11,750
Upper Upscale	DC	2017	1	247	28	$ 54,700,000	$ 221,457	46.22%	77.26%	$155.10	$119.82	$23,988	$4,204,265	$8,256
Upper Upscale	Chicago	2013	1	412	11	$ 51,641,500	$ 125,343	29.99%	64.53%	$154.21	$99.51	$18,982	$4,870,976	$8,335
Upper Upscale	DC	2015	1	220	6	$ 70,000,000	$ 318,182	34.44%	76.42%	$162.73	$124.36	$36,890	$6,486,227	$29,483
Upper Upscale	Dallas	2015	1	536	35	$ 41,600,000	$ 77,612	27.33%	64.48%	$103.78	$66.92	$10,042	$3,327,499	$1,882
Luxury	DC	2010	1	183	178	$ 74,000,000	$ 404,372	35.15%	79.09%	$253.27	$200.31	$40,237	$5,469,228	$19,389
Upper Upscale	Chicago	2012	1	525	34	$ 37,000,000	$ 70,476	29.13%	66.16%	$125.37	$82.94	$16,881	$7,167,433	$12,659
Upper Upscale	Chicago	2015	1	525	34	$ 82,000,000	$ 156,190	29.16%	76.51%	$137.66	$105.32	$21,544	$9,081,449	$17,298
Upper Upscale	Chicago	2010	1	424	30	$ 165,000,000	$ 389,151	41.68%	76.99%	$209.50	$161.30	$38,007	$12,052,797	$28,426
Luxury	Dc	2012	1	335	52	$ 143,800,000	$ 429,254	43.98%	85.65%	$207.00	$177.30	$38,532	$11,458,225	$32,763
Luxury	DC	2010	1	206	90	$ 48,213,251	$ 234,045	10.14%	72.32%	$206.69	$149.47	$9,416	$291,643	-$20,357
Upper Upscale	Chicago	2012	1	417	18	$ 88,212,500	$ 211,541	42.72%	79.51%	$158.43	$125.96	$26,679	$4,776,000	$11,453
Luxury	NYC	2012	2	259	86	$ 105,000,000	$ 405,405	25.82%	72.16%	$821.43	$592.77	$70,347	$10,233,454	$39,511

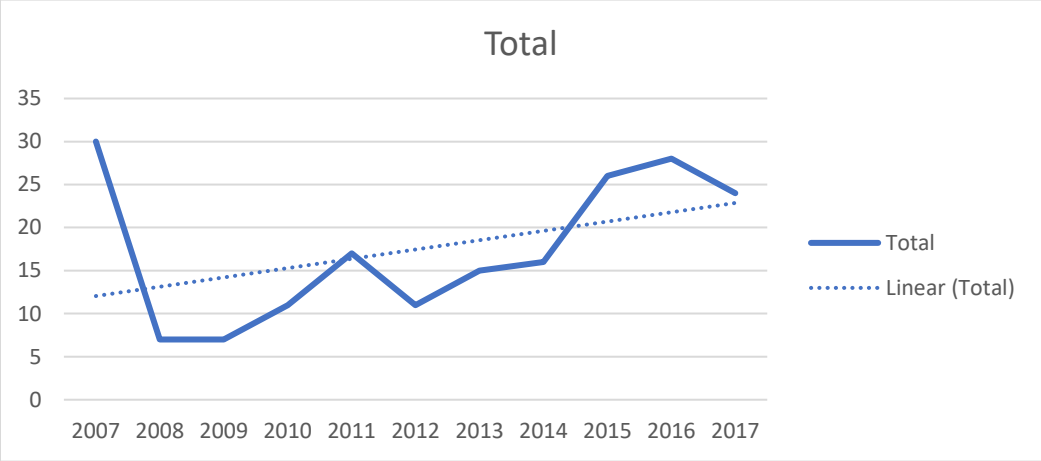

Figure A.1. Frequency of 192 sales transactions, 2007 through 2017